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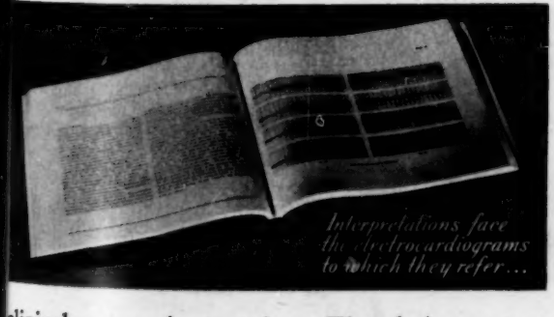
New Electrocardiography by Graybiel & White



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See Also SAUNDERS ADVERTISEMENT on Page 3

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TOXOPLASMIC ENCEPHALITIS IN CHILDREN

ALBERT B. SABIN, M.D.

CINCINNATI

It has been abundantly demonstrated in recent years that acute nonsuppurative encephalitis is a syndrome of multiple etiology. My purpose in the present communication is (1) to present evidence that organisms of the genus Toxoplasma can be the cause of such encephalitis in children, (2) to describe the clinical and pathologic appearances and (3) to indicate the steps which can be taken to establish the diagnosis.

PRESENT STATUS OF TOXOPLASMA

Toxoplasma is a genus of protozoan parasites which were first observed in the gondi (North African rodent) in 1908 by Nicolle and Manceaux,[1] who differentiated it from Leishmania, and independently in the same year in the rabbit (Brazil) by Splendore.[2] They are highly organized parasites consisting of distinct cytoplasm and nuclear chromatin and are crescentic, pyriform, oval or round, measuring 6 to 7 microns in length and 2 to 4 microns in width, depending on the stage of development, as seen in fresh cover-slip preparations or in stained films. In fixed tissue sections they are not only smaller but also appear different because of the shrinkage of the cytoplasm and nucleus. The chief taxonomic characteristic of the group, however, is the capacity to multiply and produce disease in a wide range of hosts, including mammals and birds. Since 1908 there have been reports of the natural occurrence of the organisms in a large number of animal species (gondi, rabbit, guinea pig, mouse, rat, squirrel, dog, monkey, pigeon and other birds) from almost all parts of the world, but in the majority of instances the diagnosis was based entirely on morphology. The existence of Toxoplasma in any host cannot, however, be accepted as proved without demonstrating the chief characteristic of pathogenicity for many different types of animals. Sabin and Olitsky[3] first proved the existence of Toxoplasma in North America when they isolated and maintained for study a highly pathogenic strain from a guinea pig. They demonstrated that (1) this strain was pathogenic for guinea pigs, mice, rabbits, rhesus monkeys, chicks and chickens, (2) multiplication was possible only within living cells, which included not only monocytes and endothelial cells but practically every type of parenchymal cell (liver, adrenals, lung, brain), (3) infection could be effected experimentally by the intracutaneous, subcutaneous, intracerebral, intravenous, intranasal and oral routes and contact infection, studied in mice, occurred only when small numbers of starved animals were allowed to feed on others recently dead of the experimental disease, and (4) neutralizing antibodies, which could be used not only as an index of infection but also as a means for identifying Toxoplasma, developed during the course of the disease in some animals (rhesus monkeys) but not in others (rabbits).

Toxoplasma has been reported on a number of occasions as causing disease in man, but, with one exception, on inadequate and inconclusive criteria. Castellani[4] described bodies which he believed to be Toxoplasma in smears of the blood and spleen of a 14 year old boy from Ceylon who died of a disease characterized by severe anemia, prolonged fever and splenomegaly. Fedorovitch[5] found bodies similar to those reported by Castellani in blood smears of a 10 year old boy from the Black Sea district who also had prolonged fever, anemia and splenomegaly. Chalmers and Kamar[6] also reported bodies similar to those of Castellani in a film of the spleen of a soldier in the Sudan, who along with many others suffered chiefly from chronic fever, headache, cough and diarrhea. While even the morphologic resemblance to Toxoplasma has been questioned in these cases (Wenyon[7]), they cannot be accepted as examples of human toxoplasmosis chiefly because definite identification is impossible without transmission to animals of various species. In this connection it should be pointed out that isolation of Toxoplasma from a single animal inoculated with suspected human material also constitutes inadequate evidence unless the same parasites are directly demonstrable in the suspected tissue, or at least several animals, of a stock proved not to be spontaneously infected, succumb within a similar period after inoculation; as an example may be cited Bland's[8] isolation of Toxoplasma from a rabbit inoculated with the blood from a patient with glandular fever (infectious mononucleosis).

Toxoplasma has also been considered as the probable etiologic agent in still another type of human disease.

Read before the twelfth annual meeting of the Society for Pediatric Research at Skytop, Pa., May 1, 1940.

From the Children's Hospital Research Foundation and the Department of Pediatrics of the University of Cincinnati College of Medicine.

1. Nicolle, C., and Manceaux, L.: Sur une infection à corps de Leishman (ou organismes voisins) du gondi, Compt. rend. Acad. d. sc., **147**: 763, 1908; Sur un protozoaire nouveau du gondi, ibid. **148**: 369, 1909.
2. Splendore, A.: Un nuovo protozoa parassita de conigli, Rev. Soc. scient. São Paulo **3**: 109, 1908; Sur un nouveau protozoaire parasite du lapin: Deuxième note préliminaire, Bull. Soc. path. exot. **2**: 462, 1909.
3. Sabin, A. B., and Olitsky, P. K.: Toxoplasma and Obligate Intracellular Parasitism, Science **85**: 336, 1937.
4. Castellani, A.: Note on Certain Protozoa-like Bodies in a Case of Protracted Fever and Splenomegaly, J. Trop. Med. **17**: 113, 1914.
5. Fedorovitch, A. I.: Hémoparasites trouvés dans un cas de fièvre chronique, Ann. Inst. Pasteur **30**: 249, 1916.
6. Chalmers, A. J., and Kamar, A.: Toxoplasma Pyrogenes Castellani, J. Trop. Med. **23**: 45, 1920.
7. Wenyon, C. M.: "Hemogregarines" in Man, with Notes on Some Other Supposed Parasites, Trop. Dis. Bull. **20**: 527, 1923.
8. Bland, J. O. W.: Glandular Fever II. The Protozoal Nature of the Experimental Disease, Brit. J. Exper. Path. **12**: 311, 1931.

Jankû [9] reported the presence of parasitic cysts in the retinal lesion of the right eye of an infant who had left microphthalmus and increasing hydrocephalus from birth, and although he referred to them merely as Sporozoa, Levaditi [10] suggested that they may be Toxoplasma. Torres [11] found parasites in sections of the brain, heart, skeletal muscle and subcutaneous tissue of an infant who died with convulsions at 2 days of age and named them Encephalitozoon chagasi, although in this case also Levaditi was inclined to regard the parasites as Toxoplasma. "Parasitic" forms in the spinal fluid of a 17 year old boy (Corsica) who died

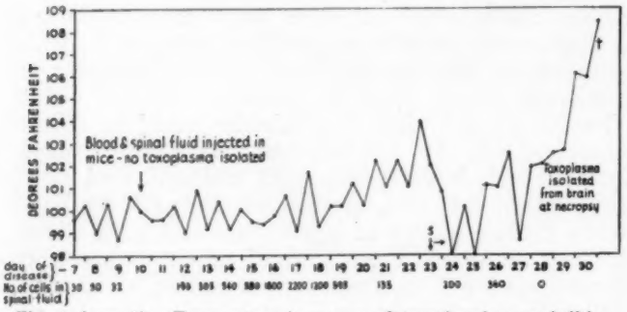
DEGREES FAHRENHEIT
Blood & spinal fluid injected in mice - no toxoplasma isolated
Toxoplasma isolated from brain at necropsy
day of disease
No. of cells in spinal fluid

Fig. 1 (case 1).—Temperature in a case of toxoplasmic encephalitis.

of meningitis after an illness of three days were described by Coulon,[12] who called them Encephalitozoon brumpti because they were larger than those described by Torres. In 1937 Wolf and Cowen [13] gave a complete description of the clinical and pathologic observations in a case of congenital granulomatous encephalomyelitis in an infant who died at 29 days of age; because the parasites which they found with ease in the sections of the nervous system were smaller in size than that recorded for Toxoplasma organisms in fresh preparations or stained smears, they called them Encephalitozoon hominis. The familiarity with Toxoplasma, gained from two years of study of a guinea pig strain, led me to suggest to Wolf and Cowen that there was nothing in the appearance of the parasites and the associated pathologic changes found in their case which was inconsistent with their identification as Toxoplasma, but that an absolute diagnosis was possible only after suitable transmission to animals. After a study of this guinea pig strain in histologic sections, Wolf and Cowen [14] noted the similarity to the parasites in their human case and reported finding similar parasites and lesions in still another case of congenital encephalitis which was described by Richter [15] and reinvestigated by themselves. However, it was not until the following year, 1939, that definite evidence was supplied by Wolf, Cowen and Paige [16] that the parasites found in association with the granulomatous lesions in a 31 day old infant dead of "congenital" encephalitis were actually Toxoplasma; this was accomplished by transmission to a large number of animals, and comparative biologic and immunologic studies which those authors [16] and I [17] made established the identity between Toxoplasma of human origin and the guinea pig strain. There is therefore definite evidence of toxoplasmic infection in only one human being, an infant with "congenital" encephalitis; that the four other cases of congenital encephalitis associated with morphologically similar parasites are also examples of the same infection can be considered only as probable. The recent report of Pinkerton and Weinman [18] contains most striking morphologic evidence of the occurrence of lesions and Toxoplasma-like parasites in the central nervous system, myocardium, liver, spleen, skin, lymph nodes, bone marrow, adrenals and kidneys of a 22 year old Peruvian. It may be of interest to note also that, through the courtesy of Dr. J. H. Bauer and L. T. Coggeshall of the International Health Division of the Rockefeller Foundation, I have had the opportunity to observe lesions (focal necrosis) and Toxoplasma-like structures in sections of liver obtained in the routine yellow fever viscerotome studies in South America.

REPORT OF PRESENT CASES

CASE 1.—*Encephalitis in a 6 year old boy, fatal one month after onset. Lesions and parasites in nervous system. Toxoplasma isolated from many mice inoculated with nervous tissue, and neutralizing antibodies for Toxoplasma demonstrated in blood obtained from patient post mortem.*

Clinical History.—R. H., a white boy aged 6 years, who was born and raised in Cincinnati, was admitted to the Contagious Division of the Cincinnati General Hospital on Oct. 31, 1939, complaining chiefly of weakness of the legs and headache. There was nothing of significance for the present illness either in the family or the past history.

The history of the present illness begins with an incident on Oct. 22, 1939, when the boy received a blow on the head with a baseball bat. He was not knocked down, however, and the blow was so slight that he laughed about it. Two days later (October 24) he had severe headache which was relieved by acetylsalicylic acid. On October 25, while going to school, he staggered and had much difficulty in walking. He was sent home from school and was put to bed complaining of weakness of the right leg and severe frontal headache. On the same day (October 25) he had a generalized convulsion, and the local physician who examined him could find "nothing specifically wrong." He vomited once on October 27, and on October 30 the headache reappeared and weakness of both arms was noted. He had another convulsion on October 31 and vomited "forcefully" just before admission. There was no history of fever or of respiratory or gastro-enteric disturbance prior to admission.

Physical Examination.—On admission to the hospital, which was seven days after the first onset of headache, the boy appeared well developed but somewhat poorly nourished, was oriented, mentally alert and cooperative, and did not appear very ill. The rectal temperature was 99.6 F. and there was no evidence of injury to the head or even of localized tenderness. The positive physical signs outside of the nervous system consisted of (1) a generalized lymphadenopathy involving especially the anterior and posterior cervical nodes and to a lesser extent the axillary and inguinal nodes and (2) a palpable spleen. The affected lymph nodes were firm, discrete and not tender. The neurologic examination was remarkable for the negative rather

9. Jankû, J.: Pathogenesis and Pathologic Anatomy of Coloboma of the Macula Lutea in an Eye of Normal Dimensions, and in a Microphthalmic Eye, with Parasites in the Retina, Časop. lék. česk. **62**: 1021, 1052, 1081, 1111 and 1138, 1923.

10. Levaditi, C.: Au sujet de certaines protozooses héréditaires humaines à localisations oculaires et nerveuses, Compt. rend. Soc. de biol. **98**: 297, 1928.

11. Torres, C. M.: Sur une nouvelle maladie de l'homme, caracterisée par la présence d'un parasite intracellulaire très proche du Toxoplasma et de l'Encéphalitozoon, dans le tissu musculaire cardiaque, les muscles du squelette, le tissu cellulaire sous-cutanée et le tissu nerveux, Compt. rend. Soc. de biol. **97**: 1778, 1927; Morphologie d'un nouveau parasite de l'homme, Encéphalitozoon chagasi, n. sp., observé dans un cas de méningo-encéphalomyélite congénitale avec myosite et myocardite, ibid. **97**: 1787, 1923; Affinités de l'Encéphalitozoon chagasi agent étiologique d'une méningo-encéphalomyélite congénitale avec myocardite et myosite chez l'Homme, ibid. **97**: 1797, 1927.

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than the positive results. There was no nuchal rigidity, and the Kernig and Brudzinski signs were negative. There was no photophobia, and examination of the fundi revealed neither papilledema nor any exudate or hemorrhage in the retina. There were no signs of involvement of any of the cranial nerves. He could move all his extremities and there were no tremors, atrophy or definite weakness in any of them. Sensation was normal. The knee jerks were equal and active, while the ankle jerks, the abdominals and the reflexes of the upper extremities were obtained irregularly. The Babinski, Hoffman, Chvostek and Trousseau signs were negative.

Course.—On October 31, about four hours after admission, he became very restless and semidelirious and had a convulsive seizure, which began with slight twitching of the face and right arm, followed by a turning of the head and eyes to the right, and continued with twitching of both sides of the face and tongue, violent clonic movements of the right arm, slight clonus of the right leg and tonic spasm of the left arm and leg. The seizure lasted about six minutes and was followed by relaxation and stupor. The next day he was apathetic, comatose, confused and irrational, and jerky movements of the right hand and arm were noted. He became more apathetic and, although he still responded to noise and light, he did not speak. Jerking movements of the right upper extremity continued, and by the eleventh day of the disease there was twitching of the arms, face and tongue occurring with a certain rhythmicity. Between the eleventh and twenty-third days of the disease his condition was more or less the same with occasional convulsive seizures and periods of muscle twitching. Parkinsonian-like movements were noted on the twenty-third day and he continued to get worse with rapid and labored respiration, weak and irregular pulse, profuse perspiration and almost persistent muscle twitching, sometimes approaching convulsive severity. He died on the thirtieth day of the disease coincidentally with a rise in temperature to 108.4 F.

The temperature (fig. 1) ranged between 99 and about 101 F. until the twentieth day, when it rose to 102.2 and remained at a higher level thereafter except for about two days after the beginning of sulfanilamide[19] therapy on the twenty-third day of the disease. Except during the last few days, the pulse and respiratory rates were more or less proportional to the temperature.

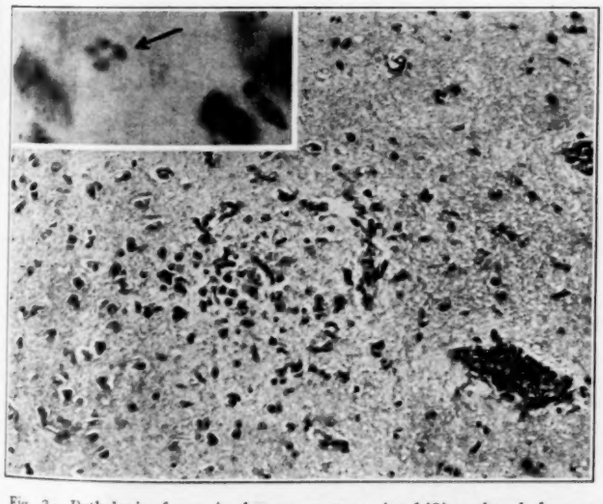

Fig. 2.—Pathologic focus in human cortex; (× 148) reduced from a photomicrograph with a magnification of 240 diameters. Inset shows group of four organisms of the genus Toxoplasma; (× 857) reduced from a photomicrograph with a magnification of 1,400 diameters.

Treatment was symptomatic and consisted of sedatives, transfusions, intravenous injection of fluid, gavage (because there were periods of dysphagia) and during the last week of the disease sulfanilamide.

Laboratory Data.—Spinal Fluid: The number of cells per cubic millimeter rose from 30 on the seventh day to 2,200 on the seventeenth day and then dropped again to a point where no cells were seen on the twenty-eighth day of the disease; the cells were predominantly mononuclear throughout; the

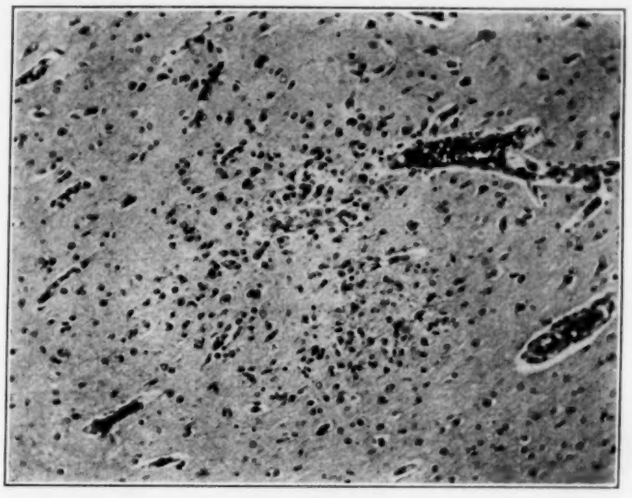

Fig. 3.—Pathologic focus in human cortex; (× 148) reduced from a photomicrograph with a magnification of 240 diameters.

results of repeated chemical examinations yielded values of 15-38 mg. per hundred cubic centimeters for protein and 45-76 mg. per hundred cubic centimeters for sugar; cultures and Wassermann reaction were negative.

Blood: Cultures and the Wassermann reaction were negative. The amount of sugar was 128 mg. and of calcium 10.2 mg. per hundred cubic centimeters. The Widal test, Brucella abortus and Pasteurella tularense agglutination were normal on the twenty-first day of disease. A typical blood count on the fifteenth day of the disease showed 5,020,000 erythrocytes and 10,000 leukocytes, with 70 per cent neutrophils, 25 per cent lymphocytes, 5 per cent monocytes and less than 1 per cent of eosinophils and basophils.

The throat culture was negative for diphtheria bacilli. The urine was normal on repeated tests. The tuberculin reaction was negative. Roentgenograms of the skull showed no evidence of fracture; the cervical spine and long bones were normal, and examination of the chest on the eighth and eighteenth days of the disease revealed no abnormalities.

Pathologic Examination.—The autopsy was performed within one hour after death. Unfortunately, permission was limited to examination of the brain and spinal cord. With the probable exception of congestion and slight edema there was no gross pathologic change. Even after fixation in solution of formaldehyde, section of the entire brain in 3 to 5 mm. slices failed to reveal any gross lesions. The paucity of microscopic abnormalities was equally surprising. In the first examination of sections from about twenty different levels of the brain and cord only one pathologic focus was found. Examination of more than 100 additional sections from as many different levels of the central nervous system, including the olfactory bulbs, the neopallial and rhinencephalic cortex and the corpus striatum, diencephalon, mesencephalon, pons, medulla, spinal cord and intervertebral ganglions revealed only twelve pathologic foci of the type illustrated in figures 2, 3 and 4. The pathologic focus was apparent even under low magnification as a "moth-eaten," necrotic and honeycombed area which was infiltrated with a varying number of cells which had irregular, pyknotic nuclei. An adjacent vessel occasionally showed cuffing with a single row of round cells (fig. 2) but that was infrequent. Figure 3 shows clearly the relationship that these necrotic foci bore to the cerebral vessels. Careful examination of each focus under high magnification failed to reveal forms which one could identify as Toxoplasma with certainty, although in at least one instance a group of four Toxoplasma-like structures (inset in figure 2) was found in the immediate vicinity of the area shown

19. Recent chemotherapeutic studies with the strain of Toxoplasma isolated from this patient have shown that, while sulfathiazole and sulfapyridine can exert a curative effect on toxoplasmic infection in mice, sulfanilamide only delays death but cannot prevent it. Twenty other compounds of known therapeutic effectiveness against various protozoan infections had no effect on the course of toxoplasmic infection in mice (Sabin, A. B., and Warren, J.: Therapeutic Effect of the Sulfonamides on an Intracellular Protozoan [Toxoplasma] Infection, abstr. J. Bact. [Jan.] 1941).

in figure 2. These pathologic foci were scattered diffusely throughout the nervous system and were noted in the cortex (figs. 2 and 3), right side of the thalamus (fig. 4), the corpus striatum, the nuclei of the pons and the cervical cord. While some of the foci contained isolated forms which might be suspected of being Toxoplasma, no cystlike aggregates or other collections of morphologically similar structures were found anywhere in the nervous system, even though I am fully familiar

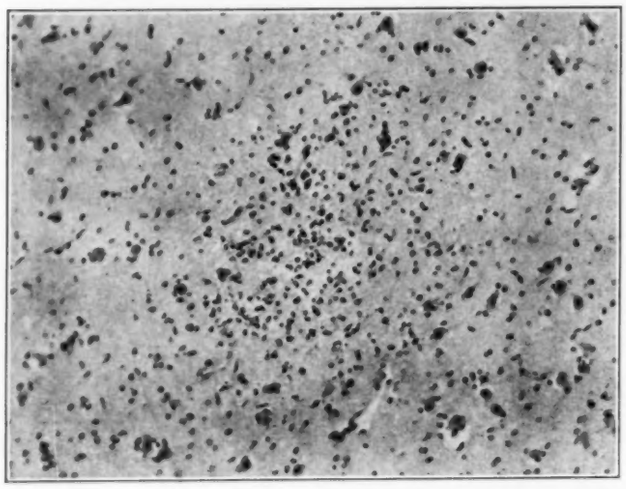

Fig. 4.—Pathologic focus in human thalamus; (× 110) reduced from a photomicrograph with a magnification of 160 diameters.

with the difference in appearance of Toxoplasma in sections of fixed tissue and in films. In addition to these necrotic foci the meninges were thickened and hyperplastic in isolated areas and sparsely infiltrated with mononuclear and polymorphonuclear cells. An occasional vessel in a cortical fissure was infiltrated with round cells (fig. 5) but that was uncommon. Most of the nerve cells and especially those of the spinal cord showed diffuse chromatolysis but were otherwise well preserved. The choroid plexus showed no pathologic change. It should be noted here that, while the character and distribution of lesions is not dissimilar to those found in mice and rabbits after infection by a peripheral route, the diagnosis of toxoplasmic encephalitis could not have been made in this case without transmission to animals. It is also remarkable how the observations in this case differ from the extensive, gross and microscopic pathologic changes which have been observed in the one proved case of "congenital" encephalitis due to toxoplasma.[16]

Transmission to Animals.—When the nervous tissue in this case was injected into mice, the possibility of toxoplasmic infection was not considered and one step was used, i. e. the preliminary light centrifugation of the tissue suspension, which is known to diminish the chances of isolating Toxoplasma from the supernatant liquid. Because of their large size, the organisms are easily sedimented by ordinary horizontal centrifugation. Nevertheless, 5 of the 8 mice which were inoculated intracerebrally (0.03 cc.) and intra-abdominally (1 cc.) with the lightly centrifuged 10 per cent suspension of the human brain in broth developed typical experimental toxoplasmosis. Culture of the human brain suspension on ordinary bacteriologic mediums was sterile (the brain was removed with aseptic precautions). On the thirteenth day after inoculation, one of the mice exhibited a swollen abdomen and puncture yielded a large amount of peritoneal exudate in which Toxoplasma organisms were found extracellularly and intracellularly both in fresh cover-slip preparations and in films stained with Wright's stain. Intracerebral injection of this exudate into 6 mice produced a fatal toxoplasmic encephalitis in all of them. Similar abdominal distention with Toxoplasma in the peritoneal exudate was found in 3 other mice (one on the fourteenth and two on the seventeenth day) which received the human brain suspension. Of these mice 1 died on the seventeenth day, 1 on the nineteenth, 1 on the twentieth and 1 survived. The most striking gross finding was a cherry-red gelatinous pneumonitis. The largest number of organisms were seen in films of the lungs, while in those of the liver and spleen only an occasional organism was found after long searching; a few pseudocysts were found in films of the brain (fig. 6). While none of the other 4 mice developed abdominal distention and the small amount of peritoneal fluid which could be obtained from them did not show Toxoplasma, 1 died on the twenty-first day and showed the same type of pneumonitis with large numbers of organisms in the films from the lungs. The remaining 3 mice were killed on the twenty-sixth day; films from the brain and viscera did not reveal Toxoplasma, and subinoculation of the tissues of each mouse into at least 4 others was negative. Subinoculation of the tissues from the mice which showed Toxoplasma produced a fatal toxoplasmic infection in each instance.

It should be noted here that at the same time that the fresh human brain (motor cortex and medulla) suspension was inoculated into mice, the olfactory bulbs and whole blood obtained by cardiac puncture postmortem were also inoculated, each into 5 mice. Toxoplasma was not found in any of these animals; they were killed on the twenty-sixth day and after examination for Toxoplasma the brain and viscera from each of these mice were subinoculated into 4 others with negative results. Furthermore, the tissues of 3 mice which died of trauma within twenty-four hours after inoculation with the human material were subinoculated into 12 others with negative results; these were in turn killed on the twenty-sixth day and their tissues inoculated into 12 new mice with negative results. Although previous attempts to demonstrate spontaneous toxoplasmic infection in another stock of laboratory mice have been unsuccessful, such an attempt was repeated on at least 200 mice of the stock used in the present study and also without success. These experiments are mentioned to point out that the stock of mice we used was not spontaneously infected with Toxoplasma and that the development of experimental toxoplasmosis in 5 of the 8 mice inoculated with the centrifuged human brain suspension points to the origin of these Toxoplasma organisms in the human brain. It is also apparent that Toxoplasma was not present in the human blood after death or in the olfactory bulbs. It should also be noted that on the tenth day of the human disease the patient's heparinized blood and spinal fluid were inoculated intracerebrally and intra-abdominally, each into 6 mice. None of these mice developed toxoplasmic infection, and passage of the brain and viscera from half their number

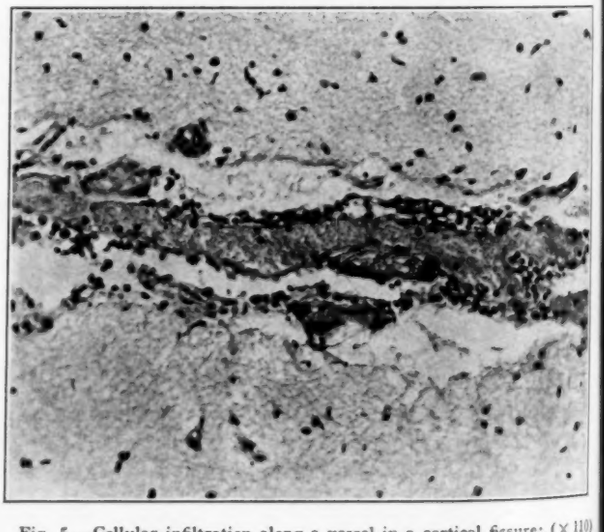

Fig. 5.—Cellular infiltration along a vessel in a cortical fissure; (× 110) reduced from a photomicrograph with a magnification of 160 diameters.

at the end of five weeks into other mice was also negative; the remaining mice were found not to be immune when they were tested ten weeks after the original inoculation.

Some of the human brain which was preserved in 50 per cent buffered glycerin and kept in the refrigerator for thirteen days was inoculated into 6 mice but Toxoplasma was not isolated either directly or by passage. This observation is in agreement with the fact that these organisms do not survive in glycerinated tissue.

PROPERTIES OF THE R. H. STRAIN OF HUMAN TOXOPLASMA

Mouse Passage.—The interval between inoculation and death was rapidly shortened on passage from seventeen to twenty-one days in the first (partly because of the small number of Toxoplasma organisms in the centrifuged human brain suspension) and from seven to eight days in the second to from three to five days in the third passage and thereafter. This strain has now undergone over forty passages in mice and is being maintained in this species for future reference and further studies.

Pathogenicity for Other Species.—Guinea pigs inoculated intracerebrally and intra-abdominally or only intracerebrally succumb with a toxoplasmic encephalitis between the fourth and sixth days. Rabbits inoculated intracutaneously with 10 per cent mouse brain suspension regularly develop necrotic skin lesions and fever on about the fourth day and succumb to a generalized toxoplasmic infection usually between the eighth and tenth days. At necropsy the liver shows innumerable white, pinpoint, necrotic foci, and the spleen is enlarged often to more than three times the normal size. Microscopically, lesions and Toxoplasma organisms are also found in the brain and adrenals. Four Macacus rhesus monkeys were inoculated with 10 per cent mouse brain suspension intracutaneously (0.2 cc. in two areas on the abdominal skin) and intra-abdominally (10 cc.); 2 of the 4 monkeys were also inoculated intracerebrally (2 cc.). All monkeys developed papular skin lesions (from 1 to 2 cm. in diameter) and fever on about the fourth day. In the monkeys inoculated only intracutaneously and intra-abdominally the temperature returned to normal after several days, the skin lesions disappeared, and neutralizing antibodies against toxoplasma appeared in the blood. Both monkeys which received the intracerebral inoculations died—one on the seventh day after two days of almost continuous convulsions and the other on the fourteenth day after several days of severe lethargy and weakness. Two 3 day old chicks, inoculated intracerebrally with 0.06 cc. of 10 per cent mouse brain suspension developed paralysis in five days; 1 died on the tenth day and the other was killed on the seventh day when he was prostrate, and a suspension of its brain which showed many Toxoplasma organisms was inoculated intracerebrally into 2 other 4 day old chicks. One of these died twelve days after inoculation, and while the other remained well for a month, Toxoplasma organisms were shown to be present in its brain by subinoculation of mice. Two 3 day old chicks which were inoculated intramuscularly with 1 cc. of 10 per cent mouse brain suspension developed a generalized weakness on the twelfth day; 1 died on the thirteenth day and the other on the nineteenth day. By subinoculation in mice, Toxoplasma organisms were shown to be present in the brain as well as in the viscera. The etiologic relationship between Toxoplasma and the fatal experimental diseases induced in the guinea pigs, rabbits, rhesus monkeys and chicks was established in each case by demonstrating Toxoplasma in films of affected tissues and in histologic sections, by positive passage back again into mice, and by the absence of other infectious agents.

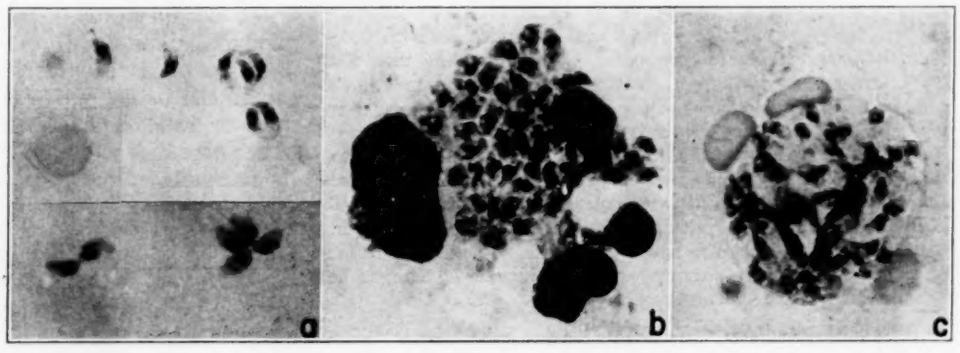

Fig. 6.—Toxoplasma as seen (*a*) free in stained films of peritoneal exudate or tissues, (*b*) intracellularly, (*c*) "pseudocyst" in film of brain. Wright's stain (× 800) reduced from a photomicrograph with a magnification of 1,000 diameters.

CASE 2.—*Atypical encephalitis of nine days' duration followed by complete recovery in an 8 year old boy. Toxoplasma isolated from guinea pigs inoculated with patient's spinal fluid.*

Clinical History.—W. B. D., a white boy aged 8 years who was born and raised in West Virginia, was well until Oct. 12, 1939, when he first complained of headache and "lights in front of his eyes." He went to school that day but was brought home by the teacher, who said that the boy had "fainted, his eyes rolled and he vomited." He was kept in bed for about a day and then was up and about without further complaint or signs of disease (he was observed by his father, who is a physician) until Oct. 16, 1939, when headache reappeared. The headache was worse on October 17, and he vomited several times on October 18. The headache was localized over the frontal region and was so severe that he was brought to the Children's Hospital in Cincinnati on October 19 because of it.

Physical Examination.—On admission the boy appeared well developed and well nourished and he did not appear acutely ill but was pressing his hands against his forehead obviously suffering from severe headache. With the exception of a temperature of 101 F. (fig. 7), noticeable enlargement of the anterior and posterior cervical lymph nodes and slight enlargement of the inguinal nodes, the systemic examination was negative. The neurologic examination also was entirely negative. Especially noteworthy were the absence of nuchal rigidity, a definite Kernig's sign or abnormal reflexes. The fundi were normal.

Laboratory Data.—Lumbar puncture on October 19 yielded a clear fluid under an initial pressure of 170-200 mm. of water and a final pressure of 130 (after removal of 12 cc.). The fluid contained 200 white cells (mostly lymphocytes), 45 mg. of protein, 59 mg. of sugar and 685 mg. of chlorides. Culture was sterile. The blood count revealed 4.7 million red cells (13.3 Gm. of hemoglobin) and 20,800 white cells with 90 per cent polymorphonuclear neutrophils, 4 per cent lymphocytes and 6 per cent monocytes. The erythrocytes showed no stippling. The urine, tuberculin test and roentgenograms of the skull and bones of the hands and wrists and blood culture were all negative.

Course.—On October 20 at 5 a. m. the patient had a slight generalized convulsion with his eyes rolled up to the left and nystagmus to the left; the pupils were small and did not react to light. This seizure lasted about two minutes. Several minutes later another seizure began during which he became cyanotic and had twitching of the right eyelid and forehead, and jerking of the left arm and hand, left foot and jaws. Twitching of the arm and face continued until about 6:30 a. m., after which he remained stuporous. He was irrational, confused and restless during the day and night, sleeping and crying or screaming at intervals.

On October 21 after a very disturbed night he rested quietly and showed much improvement, expressing the wish to read a newspaper that evening. Another lumbar puncture on this day yielded a clear, colorless fluid at a pressure of 200, with 300 lymphocytes, 35 mg. of protein, 62 mg. of sugar and 680 mg. of chlorides. A portion of this spinal fluid was used for animal inoculation.

Beginning with October 22 the boy seemed entirely well; he was bright, oriented, played, ate well and rested. He has remained well and no sequelae have been noted in subsequent months.

Animal Inoculations.—The patient's spinal fluid was injected intracerebrally and intra-abdominally into each of 2 guinea pigs and 6 mice. Because toxoplasmic infection was not suspected at the time, the mice were discarded when they remained well for five weeks. Between the fifth and sixth weeks both guinea pigs died within a day of each other and Toxoplasma was isolated by passage to other guinea pigs. The peritoneal exudate and viscera from 1 of the second passage guinea pigs dying on the tenth day contained large numbers of the organisms and were injected intracerebrally and intra-abdominally into

2 guinea pigs and 6 mice and intracutaneously into 2 rabbits. Although the 6 mice remained well for four weeks, passage of their brain and viscera to 5 other mice produced a fatal toxoplasmic infection in all of them in from four to seven days. In subsequent intracerebral passages the mice died regularly on the fourth and fifth days. One of the 2 guinea pigs died on the twenty-first day of a generalized toxoplasmic infection while the other one, still being well at the end of four weeks, was

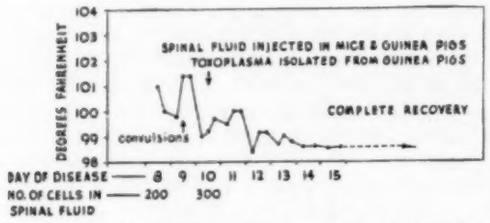

Fig. 7 (case 2).—Temperature in a case of probable toxoplasmic encephalitis.

killed and its brain was passaged to 6 mice and 2 guinea pigs. The mice remained well while the 2 guinea pigs died of generalized toxoplasmosis, one on the twelfth day and the other on the twenty-fourth day. Both rabbits developed the typical necrotic skin lesions and fever,[19] but only 1 of them died of the toxoplasmic infection while the other one recovered and was subsequently immune to reinoculation with the more virulent and regularly fatal R. H. strain (from case 1).

It is thus apparent that the W. B. D. strain (from case 2) was originally practically nonvirulent for mice and of considerably lesser virulence for guinea pigs and rabbits than the R. H. strain. In view of the fact that guinea pigs are known to be occasionally spontaneously infected with Toxoplasma, it is justifiable to question whether the W. B. D. strain was derived from the patient's spinal fluid. While the almost simultaneous death of both guinea pigs inoculated with this patient's spinal fluid and the failure to isolate Toxoplasma from at least 40 other guinea pigs which either were uninoculated or had received human spinal fluid or blood may favor the possibility that the W. B. D. strain is of human origin, the evidence cannot be regarded as absolutely conclusive.

Pathogenicity of the W. B. D. Strain for Other Species.—Using the virulent mouse-adapted W. B. D. toxoplasma, the same results were obtained in rhesus monkeys and chicks as with the R. H. strain.

Immunologic Identity.—The R. H. and W. B. D. strains were found to be immunologically identical not only with each other but also with Toxoplasma of animal origin. The methods used were the same as those which established the immunologic identity of the first human strain of Toxoplasma isolated from a case of congenital encephalitis with those of animal origin, i. e. cross neutralization of the skin lesions in rabbits with convalescent monkey serum and the resistance of rabbits recovering from infection with one strain to reinoculation with another.[17]

NEUTRALIZATION TESTS WITH HUMAN SERUM

Previous studies have shown that rhesus monkeys recovering from toxoplasmic infection as a rule developed neutralizing antibodies against the parasite, while rabbits usually became immune without such antibodies.[3] The results obtained with the serum from patient 1 (fig. 8) suggest that neutralizing antibodies against Toxoplasma developed early in the disease and were present at death. While the antibody titer is rather low, it is nevertheless of the same order of magnitude that is developed by most convalescent monkeys. This amount of neutralization was never obtained with any convalescent rabbit serum, and no neutralization of any kind has been observed with at least fifteen human serums of various sorts. The serum obtained from patient 2 (W. B. D.) ten weeks after the onset of his illness had neutralizing antibodies neither against the R. H. strain (fig. 8) nor against the W. B. D. strain. It should be noted here, however, that it has been observed that convalescent monkeys may lose their antibodies as early as six weeks after infection.[20] These results suggest that in future studies on human toxoplasmosis it would be advisable to test for neutralizing antibodies during the first three to four weeks after onset of the disease. While the presence of such antibodies would be strong evidence in favor of toxoplasmic infection, their absence would not be evidence against it.

The same serums from patients 1 and 2 were also tested for neutralizing antibodies against minimal doses of the viruses of St. Louis encephalitis, Eastern and Western equine encephalomyelitis, and lymphocytic choriomeningitis but none were found.

EPIDEMIOLOGIC CONSIDERATIONS

Although there can now be no doubt that Toxoplasma can infect human beings, there is as yet no indication how frequent such infection is. The probability is that it is a relatively rare disease which is transmitted to man from a reservoir of infection in lower animals. It should be noted, therefore, that in case 1 the family related that they had a half-grown cat in the house which became sick and had frequent convulsive seizures about the time their boy became ill. The boy was neither bitten nor perceptibly scratched by the cat. Unfortunately, the family disposed of the cat by abandoning it on an open road far from home. There was also a dog in the house but to the best of their knowledge no mice or rats. They lived in a house on the outskirts of the city and, while they were troubled to some extent by mosquitoes, they had not observed any ticks. The mother was certain that the only meat the boy had eaten was beef or pork and not rabbit or fowl. Three other children and both parents remained in good health

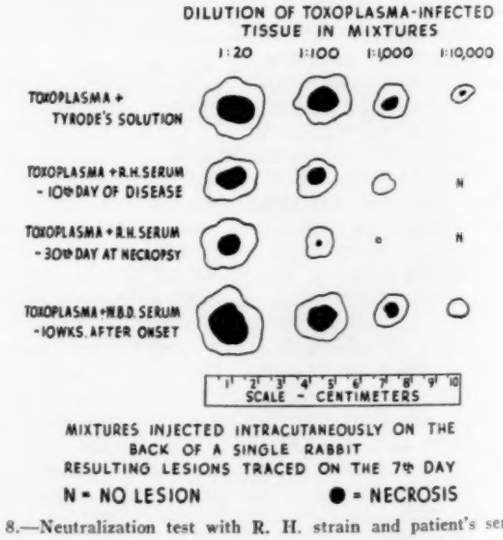
DILUTION OF TOXOPLASMA-INFECTED TISSUE IN MIXTURES
1:20
1:100
1:1,000
1:10,000
TOXOPLASMA + TYRODE'S SOLUTION
TOXOPLASMA + R.H. SERUM - 10th DAY OF DISEASE
TOXOPLASMA + R.H. SERUM - 30th DAY AT NECROPSY
TOXOPLASMA + W.B.D. SERUM - 10WKS. AFTER ONSET
N
N
SCALE - CENTIMETERS
MIXTURES INJECTED INTRACUTANEOUSLY ON THE BACK OF A SINGLE RABBIT
RESULTING LESIONS TRACED ON THE 7th DAY
N = NO LESION
● = NECROSIS

Fig. 8.—Neutralization test with R. H. strain and patient's serums.

during the entire period. In case 2 there was no history of exposure to animals or of eating any meat other than beef, pork or chicken.

There is also reason to believe that toxoplasmic infection may exist as a disease with only systemic manifestations, suggesting that one's alertness in detecting this type of infection should not be limited to patients with signs pointing to involvement of the nervous system.

19. Sabin and Olitsky.[3] Sabin.[17]

20. Sabin, A. B., and Ruchman, I.: Unpublished data.

DIAGNOSIS OF TOXOPLASMIC INFECTION

It is apparent from the two cases described in the present report that the diagnosis of toxoplasmic infection is made in the laboratory either after death of the patient or long after recovery. Work at present in progress on a complement-fixation test may overcome this difficulty, but until that is achieved it may be advisable to pursue the following procedure in a suspected case. While direct microscopic examination of the spinal fluid is obviously indicated in every case, it is doubtful whether Toxoplasma will thus be found except in rare cases in which the disease is especially destructive to the nervous system, as in infants during the first days or weeks of life.[16] The spinal fluid or heparinized blood or both should be inoculated separately into mice and guinea pigs by the intracerebral and intra-abdominal routes. Six or more mice and two or more guinea pigs should be used. Abdominal distention in the animals should be watched for and, when it occurs, the presence or absence of peritoneal exudate should be ascertained by puncture and the fluid examined for Toxoplasma. If the mice remain well for a month, about half their number should be killed, Wright-stained films of the lungs and brain examined for Toxoplasma, and the brain, lungs, liver and spleen ground in Tyrode's solution, without the use of an abrasive, and injected into 6 other mice, which are in turn observed for evidence of toxoplasmic infection. The temperature of the original guinea pigs is recorded daily, and if they do not die by the end of the sixth week they should be killed and their brain and viscera passaged to other guinea pigs. Isolation of Toxoplasma, particularly on passage, from a single guinea pig cannot be regarded as evidence that they originated from the human material; if both the original guinea pigs succumb almost simultaneously, the probability of the human origin of the Toxoplasma organisms can be considered as being greater, particularly if an examination of the stock does not reveal spontaneous infection. If the guinea pigs succumb and the mice do not, a diligent study of the mice may reveal a strain of low original pathogenicity for mice. The simultaneous isolation of Toxoplasma from a number of different animals inoculated with human material must be regarded as strong evidence for their human origin. Biopsy and inoculation of animals with an enlarged lymph node may occasionally be advisable. When a protozoan resembling Toxoplasma is isolated, it should be identified either by its pathogenicity for a wide range of hosts or by immunologic tests or both.

In addition to attempts at direct isolation of Toxoplasma, the patient's blood should be tested for neutralizing antibodies from three to four weeks after the onset of illness, and whenever possible comparison should be made with a specimen obtained earlier or later in the disease.

SUMMARY

Two cases of clinically atypical encephalitis occurring in boys 6 and 8 years of age during October 1939 were investigated and definite evidence of the etiologic relationship of the protozoan parasite Toxoplasma was obtained in one and suggestive evidence in the other. The outstanding clinical features in both patients were generalized convulsions, disorientation, fever, pleocytosis without such signs of meningeal irritation as nuchal rigidity or Kernig's sign, and the absence of signs pointing to involvement of the cranial nerves. One died thirty days after onset and the other recovered completely on the tenth day.

The chief pathologic change, found in the nervous system only after many sections from various regions had been searched, consisted of microscopic necrotic and granulomatous foci, in the vicinity of which it was occasionally possible to find structures morphologically similar to Toxoplasma. Intracerebral and intra-abdominal inoculation of fresh brain suspension produced toxoplasmic infection in 5 of 8 mice which came from a stock that was proved to be free of spontaneous infection. Inoculation of mice with the spinal fluid and blood obtained on the tenth day of the disease, and with the blood and olfactory bulbs obtained post mortem, did not yield Toxoplasma. The strain of Toxoplasma isolated from patient 1 was found to be highly pathogenic for mice, guinea pigs, rabbits, chicks and rhesus monkeys. Neutralizing antibodies for Toxoplasma were shown to have developed in the patient's blood.

Spinal fluid from the second patient was inoculated into 6 mice and 2 guinea pigs. Toxoplasma was isolated from the guinea pigs, which died within a day of each other during the sixth week after inoculation. This strain (W. B. D.) of Toxoplasma was originally and even after several passages in guinea pigs practically nonvirulent for mice but became highly virulent after several mouse passages. The mouse-adapted W. B. D. strain was as pathogenic for the other species as the R. H. strain and they were found to be immunologically identical with each other and with Toxoplasma of animal origin.

ADULT TOXOPLASMOSIS

A PREVIOUSLY UNRECOGNIZED DISEASE ENTITY SIMULATING THE TYPHUS-SPOTTED FEVER GROUP

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Although Toxoplasma has been recognized as pathogenic for lower animals since 1900, our knowledge of human infection with this protozoan is in its infancy. The organism has only recently been established as the etiologic agent in a peculiar type of meningo-encephalitis in newborn infants, under circumstances which suggest prenatal infection and consequently imply latent or subclinical infection in the mothers of these infants. Six instances of this infantile disease entity have been reported to date.[1]

The first proved case of adult toxoplasmosis was recently reported by one of us with Weinman.[2] In this case the clinical features were obscured by a concomitant infection with Bartonella bacilliformis. In the report the literature has been reviewed, and the criteria for the identification and differential diagnosis of the organism have been discussed. The probability that the infection might not be excessively rare was also pointed out at this time.

The present study is based on the occurrence, in St. Louis, of two fatal cases of an acute febrile, exanthematic disease in adults. Intracellular Toxoplasma organisms

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1. Richter, Richard: Meningo-Encephalomyelitis Neonatorum, Arch. Neurol. & Psychiat. **36:** 1085 (Nov.) 1936. Pinkerton and Weinman.[2] Wolf, Cowen and Page.[3] Magarinos Torres.[6] Wolf and Cowen.[15]

2. Pinkerton, Henry, and Weinman, David: Toxoplasma Infection in Man, Arch. Path. **30:** 374 (July) 1940.

were found in the tissues in both of these cases in such numbers as to leave no doubt concerning their etiologic significance. The clinical picture of the disease had almost nothing in common with that of the previously reported cases in infants. The similarity of the clinical and pathologic pictures in these two cases, together with the apparently identical epidemiologic features, justify the assumption that we are dealing with a previously unrecognized disease entity which closely simulates Rocky Mountain spotted fever and endemic typhus and has many features in common with certain of the recently described atypical pneumonias. The frequency of this infection can be determined only by further observation and study. As an aid in such studies, the differential diagnosis of the disease, and possible methods for its recognition during life and after death, will be discussed in the light of evidence brought out by this study.

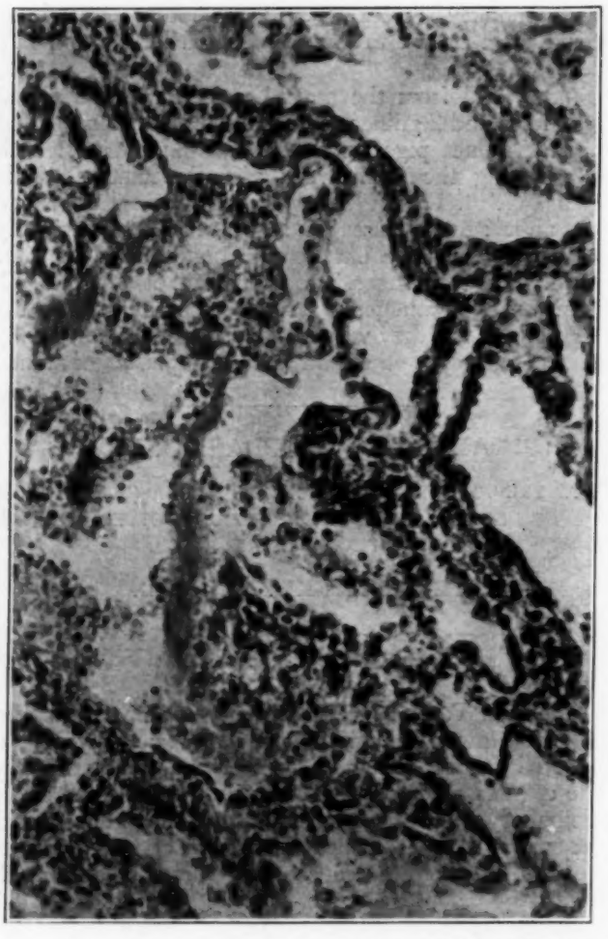

Fig. 1 (case 2).—Section of lung showing cuboidal metaplasia of alveolar lining cells and gelatinous exudate with hyaline membrane in alveolar sacs. Hematoxylin-eosin stain; × 225.

REPORT OF CASES

CASE 1.—*History.*—A white man aged 50 entered the St. Mary's Hospital in St. Louis on June 11, 1940, complaining of fever, cutaneous rash and diarrhea. The diarrhea was of seven days' duration but had almost entirely ceased on admission. The fever and cutaneous rash were noted simultaneously twenty-four hours prior to admission but the patient had complained of weakness and malaise for a period of several days before the onset of these symptoms.

The patient had visited a Boy Scout camp near Ironton, Mo., for several week ends prior to the onset of the illness and was known to have removed an engorged tick from his abdomen on or about June 1. A clinical diagnosis of portal cirrhosis of the liver had been made several months previously. During the past year, increasing dyspnea had been noted and occasional attacks of mild pain in the left chest had occurred. A nonproductive cough had been present for several weeks.

Physical Examination.—The facial expression was dull and masklike. Voice sounds were distant over the base of the left lung, and dulness to percussion was found posteriorly over both lung bases. Coarse rales were heard in the same areas. There was enlargement of the cardiac area of dulness to the right and left. Blood pressure was 120 systolic and 64 diastolic; the pulse rate was 118 per minute; temperature was 106 F. rectally; the respiratory rate was 36 per minute.

There was a maculopapular eruption covering the entire body except for the scalp, the palms of the hands and the soles of the feet. The lesions varied from bright red to pale pink, and some of them appeared to blanch on pressure. Over the abdomen and lower part of the chest there was some coalescence of the lesions. No vesicles or pustules were observed. Except for their distribution, the cutaneous lesions were entirely consistent with those of Rocky Mountain spotted fever.

On admission, the white blood cells numbered 5,300 with 1 per cent juvenile forms, 12 per cent stab forms, 39 per cent segmented neutrophils, 17 per cent monocytes and 31 per cent lymphocytes. The erythrocyte count and hemoglobin were within normal limits. All blood chemistry was within the normal range except the blood cholesterol, which was 261 mg. per hundred cubic centimeters. Blood cultures were repeatedly negative. No malarial parasites were found in blood smears. Urine examination showed 2 plus albumin and 3 plus sugar. On microscopic examination of the sediment there were many cellular and hyaline casts, with numerous red and white blood cells. The stools were brown, and semisolid. Cultures were negative for organisms of the typhoid-dysentery group. Staphylococcus aureus and type IX pneumococcus were cultured from the sputum. Agglutination tests were negative with B. proteus X2, but positive with X19 in a dilution of 1:160. Electrocardiographic study revealed sinus tachycardia, respiratory sinus arrhythmia, left axis deviation, myocardial disease and transitory paroxysmal nodal rhythm. Biopsy of the skin of the chest was done on June 17, in an attempt to establish a diagnosis of spotted fever. Although the histologic picture in the skin was not inconsistent with this disease, no rickettsiae were found in the vascular lesions after long search.

Roentgen examination of the chest showed moderately heavy hilus shadows and lung markings throughout both lung fields, accentuated in the lung bases bilaterally and with irregular areas of increased density in the lower half of both lung fields. The cardiac shadow was enlarged to the left and downward.

The rectal temperature on admission was 106 F. and throughout the illness maintained an average 103-104 F., with morning remissions of 1 or 2 degrees. The pulse varied between 110 and 120 per minute with no relation to the rise or fall of the temperature. During the fourth day in the hospital the patient gradually became irrational and markedly cyanotic, refusing symptomatic treatment. Nasal oxygen was given, but in spite of all treatment the patient lapsed into coma and died on June 16. There was a terminal oliguria with a rise in the nonprotein nitrogen.

Postmortem Examination.—The eruption described during life was present on the skin, particularly on the face, shoulders and flexor surfaces of the arms. The liver and spleen showed the changes characteristic of moderately advanced portal cirrhosis, which will not be described, as they seem unrelated to the acute illness. The lungs were markedly congested, and a hemorrhagic, frothy fluid exuded from the cut surfaces. Uniformly distributed through all lobes of both lungs were firm, shotlike areas of induration, ranging from 1 to 3 or 4 mm. in diameter. The mesenteric lymph nodes were moderately enlarged. No other gross changes of importance were noted. The brain was not examined.

Microscopic Examination.—The lungs showed an interstitial pneumonitis, with rounding up of the alveolar lining cells, and areas of organization by connective tissue corresponding to the shotty nodules described grossly. In some areas there was also a fibrinopurulent exudate in the bronchioles and alveoli, but the

connective tissue proliferation was in the alveolar walls rather than in the alveoli. The heart showed prominent fusiform accumulations of mononuclear cells between apparently undamaged muscle fibers. The liver and spleen, in addition to the characteristic changes of portal cirrhosis, showed scattered small areas of focal necrosis consistent with those described in previously reported cases of toxoplasmosis.

The most important microscopic feature was the presence in the tissues of intracellular protozoa having the morphologic characteristics of Toxoplasma. Parasitized cells were fairly numerous in the spleen (particularly in the focal lesions mentioned) and were occasionally found in the lung. In the latter organ the cells containing the organisms were principally alveolar lining cells and alveolar macrophages, while in the spleen the invaded cells were those of the reticuloendothelial system. A single parasitized cardiac muscle fiber containing a group of 18 organisms was found after long search. Sections of skin representing the papules showed focal collections of inflammatory cells around blood vessels, both in the corium and in the subcutaneous fatty tissue. No protozoa were found in these lesions.

CASE 2.—*History.*—A white woman aged 43 entered the St. Mary's Hospital on Sept. 16, 1940, complaining of fever, cutaneous rash and increasing weakness. On September 1 the patient noted a feeling of weakness and malaise which continued for ten days. On September 10, six days before admission to the hospital, she experienced a chill followed by a sudden rise in temperature and a severe headache. The temperature remained elevated and on admisison was 102.6 F. On September 13, three days before admission, a course of sulfanilamide (40 grains, or 2.6 Gm., daily) was begun. On the day of admission the patient developed marked cyanosis with nausea and blurring of vision. Sulfanilamide treatment was discontinued at this time and was not resumed.

The last week in August 1940 the patient spent at a country home near Warrenton, Mo. During her stay there she frequently removed ticks from dogs. Her husband stated that she removed two ticks from her leg at some time during this week but he could not recall the exact time.

Physical Examination.—The patient was well developed and well nourished. Her facial expression was dull and apathetic. The tongue was furred and the pharynx dry but not reddened. The respiratory rate was 24 per minute. The lung fields were resonant, and no rales were heard. A dry, unproductive cough was noted at the time of the examination. There was some tenderness in the left lower abdominal quadrant. The abdominal viscera were not palpable. Vaginal, rectal and neurologic examinations were negative.

The skin was warm and moist. The patient was perspiring freely at the time of examination. There was an erythematous maculopapular rash covering most of the body but sparing the palms of the hands, the soles of the feet and the scalp. The lesions were pale rose in color and did not fade on pressure. They were from 2 to 6 mm. in diameter and in some areas appeared to coalesce. The possibility was considered that the cutaneous rash might have been caused by the sulfanilamide. This point will be considered later.

On admission, the white blood cells numbered 10,050, with 2 per cent juvenile forms, 14 per cent stab forms, 60 per cent segmented neutrophils, 4 per cent monocytes and 20 per cent lymphocytes. The erythrocyte count, hemoglobin and platelet count were within normal limits, as were also the nonprotein nitrogen, blood sugar, blood chlorides and carbon dioxide combining power. No malarial parasites were found in the blood smears. The Kline test was negative. The urine was normal. Blood cultures up to the day of death were negative. The examination of the feces was negative for pus, ova and motile parasites, and cultures were negative for organisms of the typhoid-dysentery group.

Agglutination tests for typhoid, paratyphoid, dysentery and tularemia were negative. Positive agglutination with B. abortus in a dilution of 1:1,280 was found, but when repeated with a new antigen only partial agglutination in a dilution of 1:80 was obtained. On September 24, four days before death, agglutination tests with B. proteus X2 and X19 were negative at all dilutions higher than 1:20.

The clinical condition remained the same during the first five days in the hospital except that the cutaneous rash faded slightly during this period. On September 21, however, the patient suddenly developed cyanosis and marked dyspnea, the respiratory rate reaching 56 per minute. Rales were heard at both lung bases posteriorly. Examination of the chest with a portable x-ray apparatus showed a pronounced accentuation of the hilus shadows and lung markings of the lower lobes, suggesting pulmonary congestion. The cardiac shadow appeared normal. There was marked abdominal distention. Nasal oxygen was given with immediate improvement of symptoms.

On September 24, eight days after admission, the patient became irrational. Because of the respiratory difficulty, nasal oxygen was continued. At this time all normal reflexes of the lower extremities and abdomen were absent, and a positive Oppenheim reflex was elicited. There was no neck rigidity. Rocky Mountain spotted fever was considered as a possible diagnosis.

Fig. 2 (case 2).—Section of lung showing two alveolar lining cells distended with Toxoplasma. Note the rounding up of the alveolar lining cells and the character of the alveolar exudate. (Parts of two separate alveoli are shown in this illustration.) Hematoxylin-eosin stain; × 1,000.

The temperature remained high, averaging 103-104 F. throughout the course of the illness. There were transitory remissions at irregular intervals, but rarely did the temperature approach normal. Terminally, the patient's hearing became very poor. Symptomatic treatment included small blood transfusions, and nasal oxygen was administered throughout the course of the illness. The patient died on September 28, twelve days after admission.

Postmortem Examination.—Petechial hemorrhages were noted on the parietal pleura. All lobes of both lungs were edematous and consolidated, the right lung weighing 750 Gm. and the left 680 Gm. The cut surfaces of the lungs were grayish white and, when scraped with the knife, yielded a frothy, grayish white, semifluid material. The spleen was normal in size. The mesenteric lymph nodes were moderately enlarged. The brain

showed marked congestion. No other gross changes of importance were noted. The provisional gross diagnosis was atypical pneumonia of possible virus origin.

Microscopic Examination.—The lungs showed a remarkable picture of interstitial pneumonitis, with interstitial organization in many areas (fig. 1). Practically every alveolus appeared to be lined with cuboidal epithelium. The alveoli contained a gelatinous appearing exudate in which very few inflammatory cells were present, and the alveolar walls were often lined with a thick, hyaline membrane similar to that seen in influenzal pneumonia (fig. 1). The heart showed rare necrotic muscle fibers with relatively little cellular reaction. The liver and spleen showed occasional areas of focal necrosis like those seen in

Fig. 3 (case 2).—Cardiac muscle fiber in longitudinal section, containing a large fusiform collection of Toxoplasma. Hematoxylin-eosin stain; × 1,000.

case 1. Toxoplasma was not numerous in any of the tissues. Occasional alveolar lining cells, as well as macrophages lying free in the alveoli and bronchioles, were distended with these organisms (fig. 2), and a few myocardial fibers, otherwise normal in appearance, contained large colonies of organisms (fig. 3). These parasitized muscle fibers were so few in number that it was impossible to find them in many of the sections of the myocardium. Toxoplasma was also found in the hepatic and splenic lesions.

The brain showed occasional focal lesions (fig. 4) apparently centering around small capillaries and consisting of accumulations of small and large round cells with rare neutrophils. A few definite groups of Toxoplasma were found in these lesions after long search. The meninges were edematous and the subarachnoid space contained from 20 to 30 inflammatory cells per high power field. These inflammatory cells were chiefly macrophages and lymphocytes, with a few neutrophils. No organisms were found in the meninges.

TRANSMISSION OF THE INFECTION TO GUINEA PIGS AND MICE

On September 26, two days before the death of the patient, two male guinea pigs were inoculated, supposedly intraperitoneally, with 5 cc. each of citrated blood from patient 2. One of these animals died on the eleventh and the other became moribund and was killed on the thirteenth day after inoculation. The autopsy revealed practically identical observations in the two animals: caseation necrosis in the abdominal wall at the site of injection, enlargement of the liver and spleen, hemorrhagic lung consolidation, and softening and injection of the brain. In one animal the liver was studded grossly with minute yellowish foci of necrosis. Protozoa having all the characteristics of Toxoplasma were found in Giemsa-stained impression films of nearly all organs from these animals. The appearance of the organisms in films is shown in figure 5. They are cresentric or pyriform, with pale blue staining cytoplasm and large purple nuclei occupying the entire width of the cytoplasm and situated nearer the more pointed end. Their true shape is rarely seen in sections. Their approximate size in comparison to red blood cells may be seen in figure 5. Organisms were also numerous in the necrotic lesions at the sites of injection in the abdominal walls of the animals.

The infection has been transmitted serially in guinea pigs for seven generations by the intraperitoneal injection of emulsions of liver, spleen and brain. Animals injected in this way have shown no lesions at the sites of inoculation, but a mucinous peritonitis, with caseation necrosis of the omentum, has been added to the picture described in the animals injected with patient's blood. Animals injected subcutaneously have, however, shown necrotic foci in the abdominal wall, suggesting that the original injection with human blood may have been largely subcutaneous. The mortality in injected guinea pigs has been practically 100 per cent, death occurring between the seventh and twelfth days.

Microscopic examination of guinea pig tissues has shown an accurate reproduction of the lesions of the patients, including the focal brain lesions and the myocardial involvement. In sections of eyes, granulomatous lesions have been seen under the conjunctiva. Retinal lesions have not been noted. Numerous specimens of Toxoplasma have been found in the lesions in paraffin sections of nearly all organs. In particular, the myocardial invasion seen in the patients (fig. 3) has been frequently duplicated.

On June 17, two male guinea pigs were injected intraperitoneally with 5 cc. each of blood from patient 1. The temperatures of these animals remained normal until the ninth day after injection, when one of them was found to have a temperature of 105.8 F. On the following day the temperature was 105.2 F., and this animal was killed. About 5 cc. of clear, mucinous exudate was present in the peritoneal cavity. Since this picture was inconsistent with spotted fever, and since toxoplasmosis was not considered as a possibility at that time, the peritonitis was assumed to be "secondary infection" and further investigation was not made. The other guinea pig was reported by the caretaker to have died a few days later. In the light of our present knowledge, it seems probable that these guinea pigs died of Toxoplasma infection, although the evidence is only presumptive.

The evidence given for the transmission of Toxoplasma infection to guinea pigs by inoculation with blood from patient 2 seems fairly conclusive. Both injected animals died of the infection, and organisms were numerous at the actual sites of inoculation. The possibility of bringing to light a latent spontaneous Toxoplasma infection in guinea pigs by the trauma of injection has, however, been pointed out in a previous publication.[2] In order to rule out this possibility as far as possible in the present instance, two procedures were carried out. In the first place, three guinea pigs from the same source as those used for the inoculation in case 2 were killed, and emulsions of brain, spleen and liver were pooled and injected intraperitoneally into three other guinea pigs of this same group. The tem-

peratures of these animals remained normal and the animals remained in apparently good health over an observation period of forty days. At this time they were killed, and no gross or microscopic lesions were found at autopsy. Secondly, the tissues of 10 guinea pigs from this same source which had been used for the routine diagnosis of tuberculosis (with negative results) were minutely examined, but no protozoa or lesions suggestive of Toxoplasma infection were found. These guinea pigs had been killed six to eight weeks after injection and were all negative to gross inspection at autopsy.

On October 6, brain and liver tissue removed post mortem from patient 2 and kept in glycerin in the ice box at 40 F. for eight days was emulsified and injected intracranially into twenty young Swiss mice. At this time the diagnosis had not been made, but a frozen section of the lung had supported the provisional gross diagnosis of atypical "virus" pneumonia. Consequently, 10 mice were injected with the unfiltered material and 10 with the material after passage through a Seitz filter.

The 10 mice injected with the filtered material showed no symptoms during an observation period of sixty days. Seven of the 10 mice injected with the unfiltered material died between the fifth and the tenth day after inoculation. The tissues of 3 of these mice were examined microscopically, and numerous intracellular Toxoplasma organisms were found in the brain, spleen and liver of 2 of these. At this time a paratyphoid infection (B. typhi murium) had been discovered in this strain of mice, and occasional normal mice were dying of this infection. The three experimental mice showed, in addition to the Toxoplasma infection, evidence of the paratyphoid infection in the form of extracellular and intracellular gram-negative bacilli in the tissues. Tissues of 10 mice dying spontaneously of the paratyphoid infection alone were minutely examined and Toxoplasma was not found.

Because of the paratyphoid infection, the Toxoplasma strain in mice could not be transmitted serially. The foregoing facts, however, strongly suggest that the

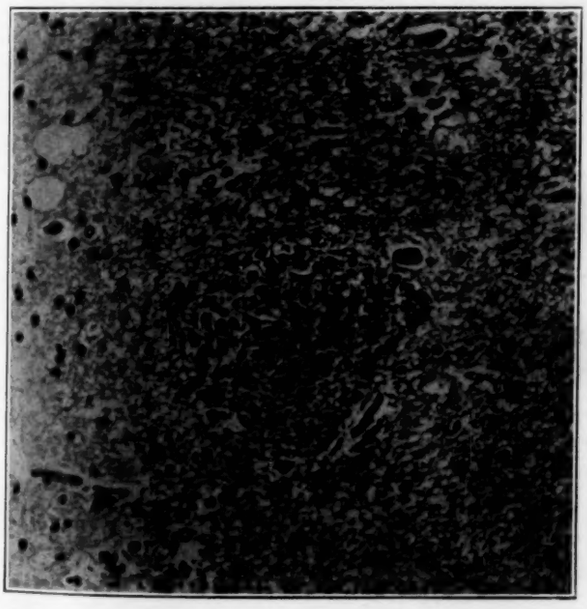

Fig. 4 (case 2).—Focal brain lesion. Note the resemblance of this lesion to the lesions seen in typhus and spotted fever. Hematoxylin-eosin stain; × 225.

Toxoplasma organisms seen in the mice were of human origin and did not represent a latent infection in the mice. When added to the evidence of the transmission of the infection to guinea pigs, it seems clear, beyond a reasonable doubt, that the Toxoplasma infection was transmitted from patient 2 to both of these experimental animals.

Wolf and his co-workers [3] undoubtedly transmitted human Toxoplasma infection to rabbits, infant mice, chicks and guinea pigs by intracerebral injections of brain tissue from one of their infantile cases. The observations reported here represent the first apparently successful transmission of Toxoplasma infection to animals by the injection of human blood. They suggest

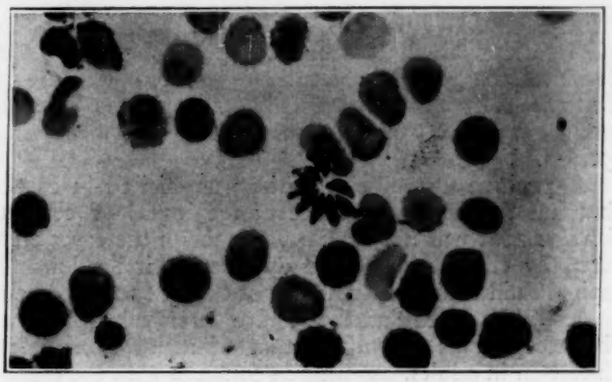

Fig. 5.—Toxoplasma in Giemsa-stained film preparation from the omentum of guinea pig. Second passage of the infection in guinea pigs after isolation from blood of patient 2; × 1,000.

that this procedure may be valuable as a method for making an accurate diagnosis.

CLINICAL FEATURES

It would be obviously unsafe to assume that the clinical descriptions of the 2 reported cases form a complete picture of the disease. Their almost complete identity, however, suggests that they may be taken as a tentative working basis. Prodromal symptoms consisting of malaise and weakness were present for several days before the onset of acute illness in each case. The onset of the acute illness was sudden, with chills and fever, and a variable but sustained elevation in temperature was present throughout the course of the disease. The duration of the fever was apparently six days in case 1 and eighteen days in case 2, but the presence or absence of slight fever during the prodromal stage is an unknown factor in each case. The pulse was rapid with some variations, not following the temperature fluctuations with any regularity.

A maculopapular eruption, involving the entire body but sparing the palms of the hands, soles of the feet and scalp, seems to be an important feature in the diagnosis from a purely clinical point of view. The significance of the cutaneous eruption in case 2 is somewhat doubtful, since it may conceivably have been caused by the administration of sulfanilamide. Long, Bliss and Feinstone [4] report that only 1.6 per cent of 307 adults receiving large doses of this drug developed dermatitis and that this symptom was not seen before the fifth day of therapy. It seems unlikely that it could have occurred in the case reported here on the third day of therapy, particularly since the dosage used was small. It should also be pointed out that cutaneous lesions containing Toxoplasma were noted at autopsy in the single previously reported case of adult toxoplasmosis [2] and that cutaneous lesions were present in case 1 (reported here) in which chemotherapy was not used.

3. Wolf, Abner; Cowen, David, and Paige, Beryl: Human Toxoplasmosis: Occurrence in Infants as an Encephalomyelitis: Verification by Transmissions to Animals, Science **89**: 226 (March 10) 1939.

4. Long, P. H.; Bliss, Eleanor A., and Feinstone, W. H.: Mode of Action, Clinical Use and Toxic Manifestations of Sulfanilamide, J. A. M. A. **112**: 115 (Jan. 14) 1939.

Pulmonary involvement occurred in both cases and death appeared to be due primarily to interference with respiratory function. In case 2 the pneumonitis was recognized clinically and roentgenologically eleven days after the onset of fever and six days before death. At autopsy in this case the pulmonary lesions seemed to be in a relatively acute stage. In case 1 the pneumonitis was recognized on the day following the apparent onset of fever and five days before death. The postmortem observations in this case showed a somewhat older lesion, accompanied by focal areas of complete organization. It is therefore probable that in this case the pulmonary involvement began during the prodromal period.

A positive Oppenheim reflex was elicited in case 1 but, on the whole, evidence of meningeal or cerebral involvement was not striking. Although the cases were seen by clinicians of wide experience, indications for spinal fluid examination were not thought to be present.

It will be noted that the picture described, which may be accepted as essentially that of acute Toxoplasma infection in adults, has little in common with the clinical picture of the six previously reported instances of neonatal infection. In the infantile form retinitis, hydrocephalus and signs of meningo-encephalitis have been the outstanding features and, although 2 of the patients were said to have had "terminal pneumonia," respiratory signs and symptoms have not been stressed. Cutaneous eruption has not been mentioned in the infantile cases. In one case, however,[5] focal lesions and Toxoplasma were found in the fatty subcutaneous tissue at autopsy. On the whole, there would seem to be little reason for connecting the adult form with the infantile form of the disease on the basis of the clinical observations.

Perhaps the most striking feature of the clinical picture is its resemblance to that of the rickettsial diseases, and because of the history of tick bite, more particularly to that of Rocky Mountain (or Eastern) spotted fever. For an account of the clinical features of the rickettsial disease, reference may be made to a recent discussion by Gordon.[6] Evidence will be given for believing that even with complete postmortem examination toxoplasmosis could easily be mistaken for spotted fever or typhus unless Toxoplasma organisms are specifically and conscientiously looked for in tissues by one familiar with their appearance. It would therefore appear that, until the frequency of toxoplasmosis in different parts of the world is determined and methods for its accurate diagnosis are devised, local epidemics of exanthematic disease with a history of insect bite must be studied with great care. Previously reported atypical cases of spotted fever not confirmed by animal inoculation should also be restudied in the light of this new diagnostic possibility.

In typical spotted fever, the rash involves the palms of the hand, soles of the feet and scalp, a distribution not seen in typhus. It will be noted that the rash did not involve these regions in either of the two reported cases. Further observations must be made before it can be decided whether or not this feature has differential diagnostic value.

From the clinical point of view, interest centers about the pulmonary manifestations as of possible importance in the differential diagnosis. Pneumonia is a rather rare complication of spotted fever,[7] while both of our patients had evidence of lung involvement, one on the first and the other on the fifth day after entering the hospital. At autopsy the involvement was of sufficient extent in each case to be regarded as the probable cause of death. Pulmonary involvement in typhus and spotted fever is secondary and terminal, while in the cases reported here the picture was that of a primary pneumonia, resembling that of the recently described "atypical pneumonia."[8] The roentgen picture of the lungs may prove to be somewhat characteristic of the condition.

Spinal fluid examination may prove of diagnostic value, although data on this point are not available in our cases. Spotted fever has a negative spinal fluid, while typhus fever is said to show a slight increase in mononuclear cells and the fluid is not markedly turbid. In view of the definite meningeal involvement seen in sections in case 2, it seems probable that the spinal fluid would have shown an increased cell count and perhaps turbidity or other diagnostic features. One of the previously reported infantile cases of toxoplasmosis showed a spinal fluid cell count ranging up to 1,500 white blood cells per cubic millimeter, and in another case 800 red cells and 30 white blood cells per cubic millimeter were present.

THE PATHOLOGIC PICTURE

Without going into detail concerning the pathologic picture, which will be reported elsewhere, it may be stated that the gross and microscopic appearances are remarkably similar to those of typhus and spotted fever. The absence of splenic enlargement (case 2) and the pulmonary lesions (in both cases) are the only gross features of possible differential value. Histologically the focal brain lesions (in case 2) and the myocarditis (in both cases) are, as far as we are aware, indistinguishable from the lesions in both typhus and spotted fever.[9] The pulmonary lesions are unusual and possibly pathognomonic. Aside from this, the diagnosis depends on finding the intracellular protozoa in the tissues.

The pulmonary lesion bears a rather striking resemblance to that described in cases of atypical pneumonia of unknown etiology.[10] Clinically also there are many similarities between our cases and certain of the reported cases of atypical pneumonia. Previous to the discovery of the intracellular protozoa, this was believed to be the most probable diagnosis in case 2.

The massive invasion of myocardial fibers found in case 2 (fig. 3) could scarcely be overlooked in a careful examination, although invaded fibers were not numerous and were unaccompanied by cellular infiltration. They were not present in all sections of the myocardium, however, and in case 1 only one invaded heart muscle fiber was found after a prolonged search. Parasitized cells were by no means numerous in the lung in either case and were definitely rare in the brain. Tissues must be examined with great care to exclude the diag-

5. Magarinos Torres, C.: Sur une nouvelle maladie de l'homme, caracterisée par la présence d'un parasite intracellulaire, très proche du Toxoplasma et de l'Encéphalitozoon, dans le tissu musculaire cardiaque, les muscles du squelette, le tissu cellulaire sous-cutané et le tissu nerveux, Compt. rend. Soc. de biol. **97:** 1778, 1927; Morphologie d'un nouveau parasite de l'homme, ibid. **97:** 1787, 1927; Affinités de l'encephalitozoon chagasi, ibid. **97:** 1797, 1927.

6. Gordon, J. E.: The Clinical Features of the Rickettsial Diseases, in Harvard School of Public Health Symposium: Virus and Rickettsial Diseases, with Especial Consideration of Their Public Health Significance, Cambridge, Mass., Harvard University Press, 1940, p. 828.

7. Wolbach, S. B.: Rocky Mountain Spotted Fever, in Cecil, R. L.: Textbook of Medicine, ed. 5, Philadelphia, W. B. Saunders Company, 1940, p. 106.

8. Kneeland, Yale, and Smetana, H. F.: Current Bronchopneumonia of Unusual Character and Undetermined Etiology, Bull. Johns Hopkins Hosp. **58:** 229 (Oct.) 1940. Longcope.[10] Reinman.[12]

9. Wolbach, S. B.; Todd, J. L., and Palfrey, F. W.: The Etiology and Pathology of Typhus, Cambridge, Mass., Harvard University Press, 1922. Lillie, R. D.: Pathology of the Eastern Type of Rocky Mountain Spotted Fever, Pub. Health Rep. **46:** 2840 (Nov. 27) 1931.

10. Longcope, W. T.: Bronchopneumonia of Unknown Etiology (Variety X): A Report of Thirty-Two Cases with Two Deaths, Bull. Johns Hopkins Hosp. **58:** 268 (Oct.) 1940. Kneeland and Smetana.[8]

nosis of toxoplasmosis in autopsy material showing lesions of the type described. The demonstration of the rickettsiae of typhus and of spotted fever in tissues is likewise attended with great difficulties. In case 1, although tissues were studied for many hours in an unsuccessful attempt to demonstrate the rickettsiae of spotted fever, it was not until the slides were carefully restudied in the light of the observations in case 2 that Toxoplasma was found and the diagnosis was made.

The staining of the organisms in the cytoplasm of cells requires further study. In many apparently well stained sections the organisms appeared as homogeneous spherical eosinophilic bodies which could easily have been mistaken for colloid droplets or other structures of a nonspecific nature, while in other sections from the same paraffin block, stained somewhat differently, their structural detail was clearly visible.

EPIDEMIOLOGIC CONSIDERATIONS

Up to the present time nothing has been learned about the epidemiology of toxoplasmosis, although the mere fact of its occurrence in lower animals would suggest the possibility of an arthropod vector. In the reported infantile cases the presence of retinal lesions at birth presupposes subclinical infection of the mothers, but the mode of infection in the mothers and the exact method of transmission to infants remain obscure.

The occurrence of the two adult cases reported here in the late summer months and the definite antecedent history of the removal of engorged ticks a few days before the onset of the illness in each case forces one to consider the possibility that the disease may be tick borne. Attempts were made, as soon as the nature of the disease was recognized, to obtain ticks from the country home visited by the second patient. Frost had already occurred, however, and it was necessary to defer this part of the study until spring.

It must be borne in mind that, although spotted fever is probably exclusively tick transmitted, a definite history of tick bite is not always obtained. Contamination of the skin with tick viscera as a result of crushing ticks while removing them from dogs undoubtedly accounts for many cases, and ticks may become attached and drop off without the knowledge of the victim. The possibility that toxoplasmosis may be transmitted by ticks is being investigated experimentally in this laboratory. The fact that Toxoplasma, like Plasmodium malariae, belongs to the Sporozoa, suggests that the experiments should include mosquitoes.

The direct transmission of the disease from person to person by droplet infection is also suggested as a possibility by the finding of Toxoplasma-laden macrophages in the alveoli and bronchioles. Experiments are in progress to determine whether lower animals may be infected by the respiratory route.

LABORATORY DIAGNOSIS

In discussing the diagnostic problems raised by the observations reported here, it may be well to review the methods for the identification and differential diagnosis of the rickettsial diseases. A detailed discussion of these methods has been given by one of us[11] and those methods which are of possible practical use in the present problem will be considered here.

White Blood Cell Count.—The low leukocyte count in the reported cases, in the presence of pulmonary consolidation, may be of diagnostic importance. In this respect the cases resemble those of atypical pneumonia reported by various workers.[12]

Weil-Felix Reaction.—This reaction is of considerable diagnostic value, but too much reliance should not be placed on it. In typhus, agglutination in high titer with Proteus OX19 and in relatively low titer with OX12 is the characteristic finding, while, in spotted fever, agglutination is usually obtained in relatively low titer with both OX2 and OX19. In one of the cases reported here (case 2) the Weil-Felix reaction was negative, while in the other (case 1) it was positive with OX19 in a dilution of 1:160. Recent observations here (unpublished) indicate that a positive reaction in this dilution may often be found in a variety of conditions and that it can therefore have little significance. The Weil-Felix reaction in animals experimentally infected with Toxoplasma is under investigation.

Skin Biopsy.—In spotted fever a definite diagnosis can frequently be made by demonstrating rickettsiae in the endothelial cells and smooth muscle cells of arteriolar walls. In typhus fever, rickettsiae are found with greater difficulty and may be recognized by the fact that they are found only in endothelial cells. This method is of value, however, only in the hands of an experienced observer. In case 2, no definite Toxoplasma organisms were seen either in the cutaneous lesions excised during life or in those excised post mortem. It should be pointed out, however, that Toxoplasma was easily seen and recognized in cutaneous lesions excised post mortem in the first adult case reported by one of us with Weinman.[2]

We are not able at present to state that the cutaneous lesions of toxoplasmosis, typhus and spotted fever can be distinguished from one another by purely histologic examination, although suppurative involvement of the subcutaneous fatty tissue seems to be more characteristic of toxoplasmosis. Biopsy should be done in doubtful cases, however, since it is probable that Toxoplasma may be found in some cases, while the demonstration of rickettsiae will exclude toxoplasmosis in other cases.

Animal Inoculation.—It has long been realized that transmission to guinea pigs by inoculation with patient's blood is the sine qua non for accurate diagnosis of the rickettsial diseases. The procedure is a simple one, and its general adoption would be of great value in solving the problems raised by the observations presented here. Typhus and spotted fever are readily transmissible to guinea pigs by this method and easily differentiated from each other by cross immunity tests with known strains. It would appear from our observation that toxoplasmosis is transmissible to guinea pigs by the same method and that the diagnosis can be easily established by finding the organisms in smears and sections of the animal tissue. Precautions to be observed in excluding the possibility of spontaneous infection in the animals used for the test should include the inoculation of control animals with normal human

11. Pinkerton, Henry: Criteria for the Accurate Classification of the Rickettsial Diseases (Rickettsiosis) and of Their Etiological Agents, Parasitology **28**:172 (April) 1936; The Diagnosis and Classification of Rickettsial Diseases, Virus and Rickettsial Diseases, in Harvard University School of Public Health Symposium: Virus and Rickettsial Diseases with Especial Consideration of Their Public Health Significance, Cambridge, Mass., Harvard University Press, 1940, p. 817.

12. Reinman, H. A.: An Acute Infection of the Upper Respiratory Tract with Atypical Pneumonia, J. A. M. A. **111**: 2377 (Dec. 24) 1938. Kneeland and Smetana.[8] Longcope.[10]

blood, as well as the use of stock animals proved, as far as possible, to be free from the infection.

Neutralization Tests.—By mixing immune serum from a patient with the viruses of typhus and spotted fever and then injecting the mixtures into guinea pigs, it is possible to establish or exclude the diagnosis of these diseases with a fair degree of accuracy. This test should be used more frequently to make the diagnosis in cases in which recovery occurs and in which guinea pig inoculation has not been done or has given negative results. In cases in which recovery occurs which are negative for both typhus and spotted fever by this method, the test described in the following paragraph might give significant results:

Sabin and Olitsky [13] and Sabin,[14] working with Toxoplasma infection in lower animals, have developed a rabbit cutaneous protection test based on the protective action of immune monkey serum against the inoculation of virulent strains of Toxoplasma. It seems probable that this method could be used for the diagnosis of toxoplasmosis in man, although it is doubtful whether it would be of value in the early stages of the disease.

Spinal Fluid Examination.—The potentialities of spinal fluid examination as a diagnostic method have already been mentioned. Although the cerebral lesions in the cases reported here are less conspicuous than those in the reported infantile cases, the microscopic appearance of the meninges in case 2 suggests that important spinal fluid changes may have been present. Incidentally, in one of the infantile cases, Toxoplasma was found in considerable numbers in the sediment of the spinal fluid [15] and it is possible that a diagnosis could be made in this way in adult cases.

Examination of the Blood for Toxoplasma.—Toxoplasma infection was transmitted to each of two guinea pigs by the intraperitoneal injection of 5 cc. of blood from patient 2. Careful examination of a blood smear from patient 2 gave negative results, and the organisms are probably so rare in the peripheral blood that this method may have little diagnostic value. We have, however, found occasional organisms after long search in blood smears from infected guinea pigs.

Examination of Sputum for Toxoplasma.—It has been brought out in the pathologic descriptions that the alveoli and in one case the bronchioles contained macrophages distended with protozoa. Since toxoplasma organisms are easily recognized morphologically in smear preparations (fig. 5), it seems probable that sputum examination may prove to be a simple and accurate method of diagnosis. Guinea pig inoculation with sputum, preferably subcutaneously to avoid causing bacterial peritonitis, also suggests itself as a procedure of possible value.

Culture Methods.—Toxoplasma has been grown on the developing egg embryo and would probably grow in Maitland medium. The possibility of using these methods for growing the organism directly from circulating blood should not be overlooked. If this proves to be possible, it will probably be a more rapid method than animal inoculation and will have the added advantage of excluding more definitely the hazard of spontaneous infection in the test animals.

13. Sabin, A. B., and Olitsky, P. K.: Toxoplasma and Obligate Intracellular Parasitism, Science **85**: 336 (April 2) 1937.

14. Sabin, A. B.: Biological and Immunological Identity of Toxoplasma of Animal and Human Origin, Proc. Soc. Exper. Biol. & Med. **41**: 75 (May) 1939.

15. Wolf, A., and Cowen, D.: Granulomatous Encephalomyelitis Due to Encephalitozoon (Encephalitozoic Encephalomyelitis), Bull. Neurol. Inst. New York **6**: 306 (Aug.) 1937.

SUMMARY AND CONCLUSIONS

Two fatal cases of Toxoplasma infection in adults were observed. The clinical features of the disease have almost nothing in common with those of the previously described cases of neonatal infection with this protozoon, the picture being essentially that of an acute febrile exanthematic disease with atypical pulmonary involvement and, in fatal cases, death from respiratory embarrassment.

Pathologically also the picture differs widely from that of the infantile type, the outstanding feature being a peculiar type of interstitial pneumonitis, with rounding up of the alveolar lining cells and interstitial organization by connective tissue. Meningoencephalitis, though present, is not conspicuous. The pathologic features common to the infantile and the adult type are focal brain lesions, myocarditis and the presence of Toxoplasma in the lesions.

Both clinically and pathologically the disease is remarkably similar to Rocky Mountain spotted fever and may easily be mistaken for the latter disease, even with a complete and careful postmortem examination, unless the organisms are conscientiously searched for in tissues by one familiar with their appearance. The cases reported have also many clinical and pathologic features in common with certain recently reported cases of atypical pneumonia of unknown etiology. The assumption that toxoplasmosis is a rare disease is therefore not justified.

The disease was transmitted readily to guinea pigs by inoculation of blood taken from at least one of the patients during life and to mice by the intracranial inoculation of autopsy material from the same patient. This statement is made with the reservation that the inoculation may conceivably have brought to light a previously existing spontaneous Toxoplasma infection in the guinea pigs and mice employed, a possibility which, for reasons given, is believed to be remote. Toxoplasma infection has not previously been transmitted to laboratory animals by inoculation with human blood.

The observations presented in this paper introduce a new factor of uncertainty in the differential diagnosis of the acute exanthematic diseases, particularly those of the typhus-spotted fever group. At present the most practical method for accurate diagnosis is the transmission of the infection to experimental animals. Animal inoculation should therefore be done more frequently in isolated cases and small local outbreaks of diseases of this group, in an attempt to determine the frequency and importance of toxoplasmosis in various sections of the country.

In cases of obscure acute febrile illness with (or without) a rash resembling that of typhus or spotted fever, clinical and roentgen evidence of diffuse atypical pneumonitis may suggest the diagnosis. The presence of Toxoplasma-laden macrophages in alveoli and bronchioles indicates that the diagnosis might be made from Giemsa-stained films of the sputum, a diagnostic procedure which has, as far as we are aware, never been employed. The possible importance of spinal fluid examination as a diagnostic measure should also be considered in view of the meningeal involvement noted in one of the reported cases.

Purely circumstantial evidence suggests that the disease may be transmitted by ticks. The presence of organisms in bronchioles also indicates that direct droplet transmission from person to person may take place. These possibilities are being investigated.

CONSECUTIVE ATTACKS OF PNEUMOCOCCIC PNEUMONIA

REPORT OF A CASE EXHIBITING FOUR RELAPSES DUE TO FOUR PNEUMOCOCCUS TYPES

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AND
ROGER A. HARVEY, M.D.
CHICAGO

Recurrence occurs more commonly in pneumonia than in any other acute infectious disease. The incidence of one or more previous attacks has been noted by various writers as from 13.6 [1] to 41 per cent.[2] Repeated attacks in the same case are not unusual. Cases in which there were from ten [3] to twenty-eight [4] attacks have been reported. Of the cases cited by Cole,[4] thirty gave a history of more than one previous attack of pneumonia. In eighteen of these there were two previous attacks, in nine there were three, in two there were four and in one there were eighteen. The interval between recurrences is significant. In Cole's series 107 patients had only one previous attack and in only nine of these it had occurred within one year. In thirty-eight the initial attack had occurred from one to five years before, in nineteen from five to ten years earlier, in twenty-five from ten to twenty years previously and in sixteen more than twenty years before. In a carefully studied series of fifty-seven cases reported by Finland and Winkler [5] the shortest interval between infections was four weeks and the longest nearly twelve years.

In striking contrast to the frequency of recurrence in pneumococcic pneumonias is the fact that relapse is a rare phenomenon. Although the distinction between relapse and recurrence may be arbitrary, we would limit the term relapse to those instances in which the occurrence of a fresh invasion of the same or different lobe appears several days after the subsidence of an original attack. As Finland [6] points out, relapse may be due to (*a*) reinfection by the pneumococci which produced the original infection, (*b*) pneumococci of a different type or (*c*) some other organism, usually hemolytic streptococcus or staphylococcus. The importance of this observation has been stressed by Bullowa,[7] Cole,[8] Cecil [9] and Lord and Heffron [10] in discussing the failure of specific therapeutic agents. A survey of the literature reveals little detailed study on the incidence of consecutive pneumococcic infections. Although Norris [11] reported that 0.06 per cent of a series of 5,966 patients suffered relapse, no bacteriologic data were presented. Finland, Spring and Lowell [12] noted three cases in 1,037 in which relapse was produced by pneumococci of types other than those causing the original infection. We were unable to find any case in which more than one such consecutive infection was recorded. Thus our purpose in this communication is to present the complete study of a case in which four types of pneumococci were definitely shown to be etiologic agents in the production of four consecutive pulmonary lesions, all of which occurred within a period of fifty days.

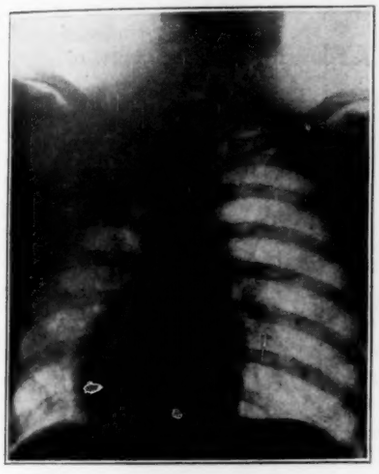

Fig. 1.—Appearance of chest on admission, showing dense consolidation of the left upper lobe (portable film). Type II pneumococci in blood and sputum.

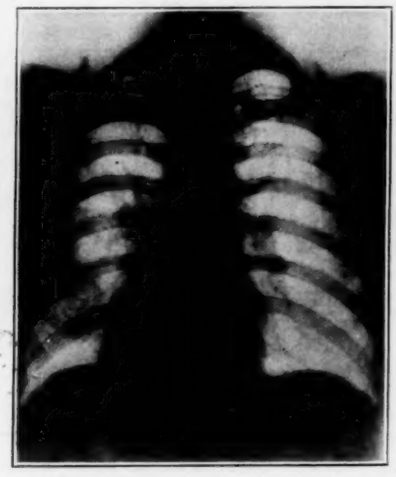

Fig. 2.—Appearance on fifteenth hospital day. The area of consolidation in the left lower lobe can be clearly seen. There is some residual infiltration in the left upper lobe, although marked clearing has occurred. Types XXIV, II and VI pneumococci recovered from sputum.

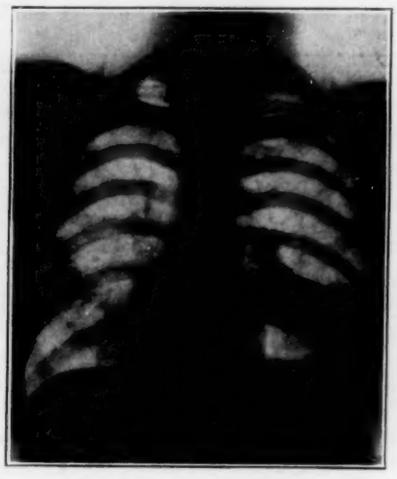

Fig. 3.—Appearance on twenty-sixth day of hospitalization. The left lung field is clear. A new area of consolidation is noted in the right lower lobe. Sputum contains pneumococci type XX.

PROTOCOL

History.—P. C., a white man aged 25, entered the University of Chicago Clinics Jan. 6, 1940, complaining of pleural pain, chills, fever and cough productive of bloody sputum. These symptoms had appeared suddenly three days before admission and were increasing in severity. The past history was noncontributory.

Physical Examination.—The temperature (rectal) was 103.8 F., pulse rate 110, respiratory rate 28. The blood pressure

From the Department of Medicine and the Douglas Smith Foundation, University of Chicago.

1. Musser, J. H., and Norris, G. W., in Osler's Modern Medicine, Philadelphia and New York, Lea Brothers & Co. **2:** 537, 1907.
2. Lord, F. T.: Diseases of the Bronchi, Lungs and Pleura, ed. 2, Philadelphia and New York, Lea & Febiger, 1925, p. 281.
3. Patterson, W. S.: Prognosis of Lobar Pneumonia and the Influence of Serum in Treatment, M. J. Australia **2:** 115 (July 29) 1922.
4. Cole, R. I.: Acute Lobar Pneumonia, in Nelson's Loose Leaf Living Medicine, New York, Thomas Nelson & Sons **1:** 203, 1920-1928.
5. Finland, Maxwell, and Winkler, A. W.: Recurrences in Pneumococcus Pneumonia, Am. J. M. Sc. **188:** 309 (Sept.) 1934.
6. Finland, Maxwell: The Significance of Mixed Infections in Pneumococcic Pneumonia, J. A. M. A. **103:** 1681-1686 (Dec. 1) 1934.
7. Bullowa, J. G. M.: Studies in the Serum Treatment of Pneumonia, New York State J. Med. **33:** 13 (Jan. 1) 1933.
8. Cole, Rufus: Serum Treatment of Type I Lobar Pneumonia, J. A. M. A. **95:** 741 (Sept. 7) 1929.
9. Cecil, R. L., and Plummer, Norman: Pneumococcus Type I: Study of 1,161 Cases with Especial Reference to Specific Therapy, J. A. M. A. **95:** 1547 (Nov. 22) 1930.
10. Lord, F. T., and Heffron, Roderick: Lobar Pneumonia and Serum Therapy with Special Reference to the Massachusetts Pneumonia Study, New York, Commonweath Fund, 1936.
11. Norris, G. W., and Landis, H. R. M.: Diseases of the Chest and the Principles of Physical Diagnosis, ed. 6, Philadelphia and London, W. B. Saunders Company, 1938, p. 510.
12. Finland, Maxwell; Spring, W. C., and Lowell, F. C.: Specific Treatment of the Pneumococcic Pneumonias, Ann. Int. Med. **13:** 1567 (March) 1940.

was 90 systolic, 50 diastolic. The patient was well developed and well nourished. He appeared acutely ill. The face was flushed and the skin was hot and dry. Cyanosis was absent. The pharynx was injected and granular. There was definite limitation of movement of the left chest. A friction rub was palpable in the left axilla. Over the upper half of the anterior and posterior left lung field, dulness to percussion, increased vocal and tactile fremitus, bronchial breathing and moist rales could be demonstrated. A coarse friction rub was heard in the left axilla. The remainder of the physical examination was not remarkable.

Laboratory Examination.—The leukocyte count was 11,200 with 76 per cent polymorphonuclears; the hemoglobin content was 12 Gm. (Sahli) and the red cell count 3,700,000. The urine contained a trace of albumin and occasional red and white blood cells. The sputum contained many pneumococci found to be type II by direct Neufeld reaction and mouse inoculation. A blood culture taken on admission contained type II pneumococci. All subsequent blood cultures were negative. X-ray examination of the chest showed consolidation of the left upper lobe (fig. 1). The Francis test[13] with type II specific soluble substance was negative. Ophthalmic and intradermal tests with rabbit serum were negative.

Hospital Course.—Immediately following identification of type II pneumococci in the sputum, 200,000 units of type II antipneumococcus rabbit serum was administered intravenously. An additional 50,000 units was given the following morning when the admission blood culture was found to be positive and the temperature still elevated. There was striking improvement following this therapy and the patient felt well until the tenth hospital day, when he developed serum sickness. The polyarticular pains, urticarial rash, leukocytosis and fever responded to the usual symptomatic measures. X-ray examination showed almost complete clearing of the previously involved left upper lobe.

On the morning of the fifteenth hospital day the patient complained of sudden sharp pain in the left lower chest and began raising moderate amounts of "rusty" sputum. The temperature rose to 103 F. A friction rub was present in the left axilla and signs of consolidation could be demonstrated in the left lower chest. X-ray examination showed pneumonic involvement of the left lower lobe (fig. 2). Bacteriologic studies of the sputum revealed pneumococci types II, VI and XXIV, the predominant type both on direct examination and following mouse inoculation being XXIV.

In view of a possible concurrent mixed pneumococcic infection, recent presence of serum sickness and a strongly positive intradermal and ophthalmic reaction to rabbit serum, it was decided to use sulfapyridine as our therapeutic agent. The drug was administered as suggested by Evans and Gaisford[14] and within seventy-two hours clinical and subjective improvement occurred. After four days of normal temperature, sulfapyridine was discontinued. At no time was there any indication of drug intolerance. Chest roentgenograms showed clearing.

On the twenty-sixth day of hospitalization, six days after cessation of sulfapyridine, the patient noticed pain in the right lower chest and once more a cough productive of rusty sputum appeared. The temperature rose to 103 F. with a corresponding leukocytosis. Examination of the chest revealed signs of consolidation at the right lung base. X-ray examination showed a new area of pneumonia, this time in the right lower lobe (fig. 3). Examination of the sputum revealed pneumococci in large numbers which appeared to consist entirely of type XX. Sulfapyridine therapy was reinstituted, the same program of dosage being used as previously. There was little improvement; the temperature, pulse and white blood cell count remained elevated. The patient grew much weaker and continued to bring up blood streaked sputum. A microcytic anemia of 3.0 million red blood cells and 9 Gm. (Sahli) of hemoglobin developed. The following day 700 cc. of citrated blood was given with no untoward effects. Clinical jaundice was observed eight days after the resumption of sulfapyridine. Blood bilirubin was 0.65 mg. per hundred cubic centimeters. Sulfapyridine was immediately discontinued, 32 Gm. having been given during this course, making a total drug intake of 65 Gm. over a period of nineteen days.

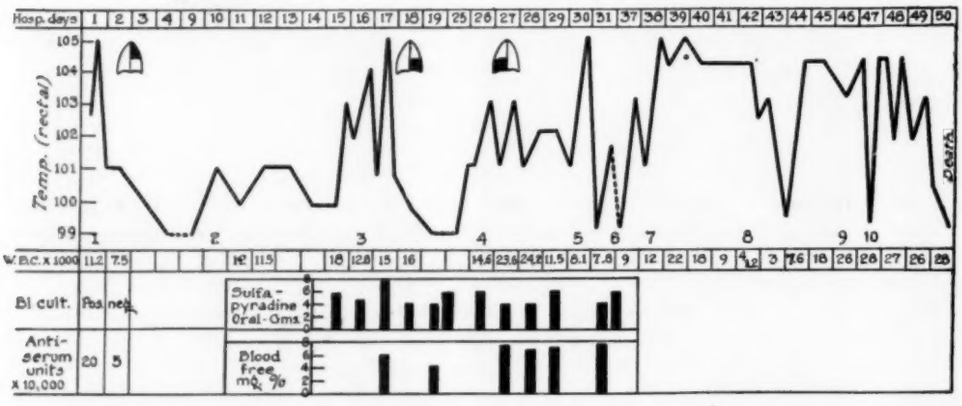

Fig. 4.—Hospital course: 1. Type II pneumonia, left upper lobe. 2. Rabbit serum sickness. 3. Type II, VI and XXIV pneumonia, left lower lobe. 4. Type XX pneumonia, right lower lobe. 5. Transfusion reaction. 6. Icterus noted; hemolytic anemia. 7. Thrombophlebitis. 8. Granulocytopenia. 9. Lung abscess, right lower lobe. 10. Cellulitis, right thigh.

The patient continued to raise moderate amounts of sputum, containing frank blood which gradually changed to small dark clots. A pulmonary infarct was suspected although the source of an embolus could not be demonstrated. Electrocardiographic examination and the blood nonprotein nitrogen were normal. The temperature fell slowly after cessation of sulfapyridine administration but on the thirty-seventh hospital day thrombophlebitis of the right femoral and popliteal veins developed, with severe edema and pain of the entire right leg. This was accompanied by a sharp rise in temperature and leukocytes.

Within four days the patient had grown much worse, the temperature ranged around 104 F. and the pulse rate was 140 per minute. Jaundice became more intense and bile appeared in the urine. The blood bilirubin was 1.4 mg. per hundred cubic centimeters. The blood nonprotein nitrogen remained normal. He now complained of soreness of the throat, and the pharynx was found to be injected and edematous; a small yellowish gray membrane was observed in the right tonsillar fossa. Smears and cultures of this area failed to show fusospirochetes or Klebs-Loeffler bacilli. Within twenty-four hours the white blood cell count had dropped from 18,000 to 9,000 and the polymorphonuclears from 76 per cent to 64 per cent. The pharynx appeared much worse, and the membrane now covered both tonsillar fossae and several small areas of ulceration and necrosis appeared on the posterior pharyngeal wall. On the following day there was further extension of the pharyngeal ulceration and necrosis. At 8 a. m. the white blood count was 4,000; three hours later it had dropped to 1,200 with 6 per cent polymorphonuclears. Oozing of blood from the gums was noted. Prothrombin was 29 per cent of normal. A transfusion of 300 cc. of citrated blood was given with resulting rise in the white blood cells to 2,000 with 10 per cent polymorphonuclears. Repeated transfusions of 700 cc. and 800 cc. were given on successive days. Gingival bleeding ceased, the pharynx showed rapid improvement and the white blood cell count rose to 28,000 with 86 per cent polymorphonuclears. Prothrombin determinations returned to normal.

The patient then began raising progressively increasing amounts of sanguinopurulent sputum and the possibility of a

13. Francis, Thomas, Jr.: The Value of the Skin Test with Type Specific Capsular Polysaccharide in the Serum Treatment of Type I Pneumococcus Pneumonia, J. Exper. Med. **57**: 617 (April) 1933.

14. Evans, G. M., and Gaisford, W. F.: Treatment of Pneumonia with 2(p-Aminobenzenesulfanamido) Pyridine, Lancet **2**: 14 (July 2) 1938.

lung abscess was considered. X-ray examination corroborated this impression, showing evidence of excavation in the previously described area of consolidation in the right lower lobe. The temperature became septic in type, cellulitis developed in the right upper leg, and the jaundice increased. Despite postural drainage and intensive supportive measures, respirations ceased on the fiftieth hospital day.

Postmortem Examination.—Both pleural cavities were obliterated by delicate fibrous adhesions. A small encapsulated empyema cavity was present over the posterior right lower lung. The right lung contained an abscess in the lower lobe and resolving lobar pneumonia of the middle and upper lobe. An organized thrombus could be seen in the branch of the pulmonary artery leading to the right lower lobe. The left lung showed resolving lobar pneumonia in the upper lobe and beginning pneumonic consolidation of the lower lobe. The liver was enlarged and demonstrated cloudy swelling and passive congestion. There was moderately far advanced cloudy swelling of the kidneys with beginning tubular degeneration. The right femoral vein contained a large organized thrombus and was surrounded by a large area of induration. Culture of the left lower lobe revealed type VI pneumococci. Agglutinins for types II, VI, XX and XXIV were demonstrated in the blood serum.

COMMENT

Evaluating the results of the bacteriologic studies, one must conclude that this case demonstrates an unusual instance of superinfection with four pneumococcus types. Although the third pulmonary infection was probably preceded by an embolus, the infarcted area was invaded by type XX pneumococcus. The clinical significance of these consecutive infections has been discussed at length in the literature dealing with specific serum therapy, but we stress again the importance of repeated bacteriologic examinations in cases of pneumococcic infections in which there is "relapse."

The toxic effects of sulfapyridine are well known and have been described by many workers.[15] However, it is of interest to note the occurrence of both acute hemolytic anemia and granulocytopenia as complications of drug therapy in this case and the appearance of the latter eight days after the cessation of sulfapyridine. Barnet [16] and Dolgopol [17] point out that damage to the bone marrow may manifest itself only after discontinuance of sulfapyridine, and included in the reports noted are occasional examples corroborating this observation. In one case of Thompson's [18] hemolytic anemia appeared three weeks subsequent to sulfapyridine administration. It would be of value, therefore, to examine the blood of all treated patients one month after cessation of the drug.

The total drug intake of 65 Gm. is of interest. Evans and Gaisford [14] state that in their experience the highest total dosage administered to adults producing no damage to the hematopoietic system was 49.5 and 51 Gm. They suggested limiting sulfapyridine dosage to 25 Gm. Although more recent studies include patients receiving larger amounts, it is felt by Dolgopol and Hobart [17] that most hematologic changes appear in those cases in which a large total of the drug is administered. The occurrence of individual sensitivity to small quantities of sulfapyridine has been reported but it probably plays a minor role in the production of blood changes. When possible, therefore, as a measure of safety the intake of the drug should be kept within a limit of 25 Gm.

15. Hodes, H. L.: Stifler, W. C., Jr.; Walker, Ethel; McCarty, Maclyn, and Shirley, R. G.: The Use of Sulfapyridine in Primary Pneumococcic Pneumonia and in Pneumococcic Pneumonia Associated with Measles, J. Pediat. **14:** 417 (April) 1939. Finland, Maxwell; Spring, W. C.; Lowell, F. C., and Brown, J. W.: Specific Serotherapy and Chemotherapy of the Pneumococcus Pneumonias, Ann. Int. Med. **12:** 1816 (May) 1939. Long, P. H., and Wood, W. B., Jr.: Observations on the Clinical Use of Sulfapyridine: II. The Treatment of Pneumococcal Pneumonia with Sulfapyridine, ibid. **13:** 487 (Sept.) 1939. Plummer, Norman, and Ensworth, H. K.: Sulfapyridine in the Treatment of Pneumonia, J. A. M. A. **113:** 1847 (Nov. 18) 1939. Abernathy, T. J.; Dowling, H. F., and Hartman, C. R.: The Treatment of Lobar Pneumonia with Sulfapyridine and Sodium Sulfapyridine with Observations on Effective Blood Levels, Ann. Int. Med. **13:** 1121 (Jan.) 1940. Barnett, Hartman, Perley and Ruhoff.[16] Dolgopol and Hobart.[17] Thompson, Edwards and Hoagland.[18]

16. Barnett, H. L.; Hartman, A. F.; Perley, A. M., and Ruhoff, M. B.: The Treatment of Pneumococcic Infections in Infants and Children with Sulfapyridine, J. A. M. A. **112:** 518 (Feb. 11) 1939.

17. Dolgopol, V. B., and Hobart, H. M.: Granulocytopenia in Sulfapyridine Therapy, J. A. M. A. **113:** 1012 (Sept. 19) 1939.

18. Thompson, L. D.; Edwards, J. C., and Hoagland, C. L.: Experiences in the Treatment of Lobar Pneumonia, Ann. Int. Med. **13:** 1138 (Jan.) 1940.

POSTOPERATIVE PERITONEAL GRANULOMATOUS INFLAMMATION

CAUSED BY MAGNESIUM SILICATE

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TOLEDO, OHIO

We have been interested for some time in the reactions caused by lycopodium powder and magnesium silicate in the tissues. Reactions initiated by foreign body substances are responsible for surgical complications which are frequently unrecognized. They are of great importance to the surgeon because of the subsequent mortality and morbidity.

Lambert [1] in 1912 called attention to the formation of giant cells in lymphocytic cultures when lycopodium was used as an irritant. Papers on the subject of foreign body irritants were written by Harrison, Lambert, Haynes, Burroughs and others and summarized and published in 1913.[2] Erb [3] reported six cases of lycopodium granuloma in 1935. Grieco [4] reported the results of experiments with the use of lycopodium and talc in 1936. Fienberg [5] reported two cases of granuloma caused by talc in 1937. Antopol and Robbins [6] discussed granuloma caused by lycopodium following the use of rectal suppositories in 1937. Ramsey and Douglass [7] discussed these reactions and reported five cases in a paper in 1940.

Lycopodium powder is produced from the spores of club moss, which belongs to the fern family. It is a fine yellowish substance used as a desiccant and absorbent with which all surgeons are familiar. This powder has also been used on pills and as a dusting powder on suppositories.

Talcum, or talc, is a native hydrous magnesium silicate. It is a white dusting powder. At times lycopodium is used in combination with talc to make a desirable powder which is easily sterilized and is used on the hands and gloves preceding operative procedures.

LESIONS PRODUCED

Lycopodium or talc or both are introduced into the tissue from the gloves of the surgeon or of his assistants. Inflammatory reaction of the granulomatous type

From the Department of Pathology and Surgery, St. Vincent's Hospital.

1. Lambert, R. A.: The Production of Foreign Body Giant Cells in Vitro, J. Exper. Med. **15:** 510, 1912.

2. Summary of papers, Tr. Cong. Am. Physicians & Surgeons **9:** 63, 91, 1913.

3. Erb, I. H.: Lycopodium Granuloma, Surg., Gynec. & Obst. **60:** 40 (Jan.) 1935.

4. Grieco, Faust: Granuloma da licopodio e da talco in seguito a laparotomia, Arch. ital. di chir. **42:** 641, 1936.

5. Fienberg, Robert: Talcum Powder Granuloma, Arch. Path. **24:** 36 (July) 1937.

6. Antopol, William, and Robbins, Charles: Lycopodium Granuloma Resulting from Use of Anal Suppositories, J. A. M. A. **109:** 1192 (Oct. 9) 1937.

7. Ramsey, T. L., and Douglass, F. M.: Granulomatous Inflammation Produced by Foreign Body Irritants, J. Internat. Coll. Surgeons **3:** 3 (Feb.) 1940.

is produced. Granulomas vary in appearance. They may be nodular and show lymphocytic infiltration, fibroblasts and giant cells of foreign body types. In one of our cases we thought we were dealing with tuberculous peritonitis. Pathologically some of the lesions resemble

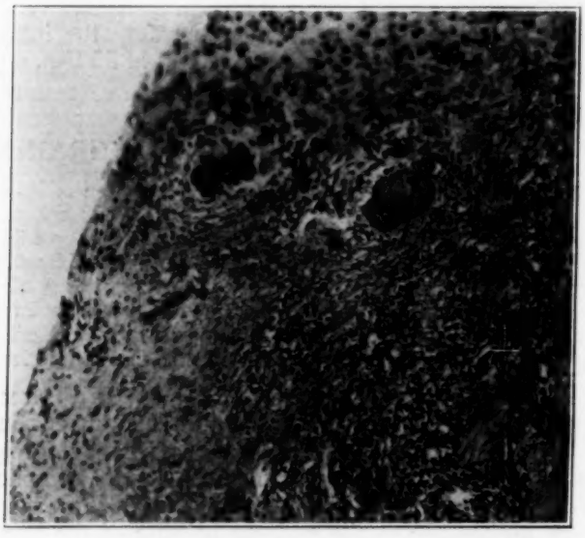

Fig. 1 (case 1).—Serosal thickening, fibroblastic proliferation, granulomatous inflammatory infiltrate and giant cells (× 70).

tubercles and may show central caseation and necrosis. When tissues from this type of inflammatory reaction are examined microscopically, lycopodium spores and magnesium silicate crystals are found. Magnesium silicate was clearly demonstrable in the two cases that we report. The crystals are usually found within the large multinuclear giant cells, and that they are undoubtedly the etiologic factors seems beyond dispute. The importance of this condition can be realized from the synopsis of the following two cases:

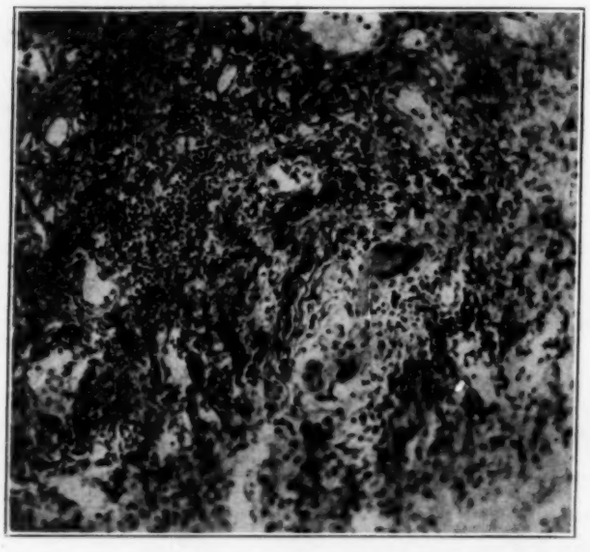

Fig. 2 (case 1).—Typical type of granulomatous inflammation; one giant cell shows an arrangement of nuclei in the form of a crescent. The resemblance to tuberculosis is seen in this area (× 70).

REPORT OF CASES

CASE 1.—A white woman aged 38, single, admitted to St. Vincent's Hospital Dec. 20, 1939, complained of abdominal cramps and pain which she attributed to spastic colon, a diagnosis previously made elsewhere. She had submitted to surgery in 1927, the gallbladder and appendix having been removed at that time. For some time following the cholecystectomy and appendectomy she had abdominal distress which was diagnosed as spasticity of the colon. These attacks had ceased about three years before, although she had since had ribbon-shaped stools containing mucus on occasion.

For a week prior to admission the patient had cramps and pain in the abdomen accompanied by watery stools. Enemas in the meantime gave poor results. The cramps continued. There was no nausea or vomiting. The temperature was 101 F. the day prior to admission. She improved during the few days that she was in the hospital and was discharged December 24 with some abdominal tenderness but no diarrhea and no fever. The diagnosis on discharge was chronic pelvic inflammatory disease and grip.

The patient was readmitted to the hospital Jan. 5, 1940, with pain in the lower part of the abdomen and a palpable mass in the left tubo-ovarian region. There was a very definite cervicitis, and a preoperative diagnosis of cervicitis and left salpingo-oophoritis was made. Operative procedure was undertaken January 9. The cervix was dilated and tissue was obtained for biopsy. The cervix was cauterized. The abdomen was opened and the left tube was found greatly swollen and edematous, injected and bound down with the ovary to the posterior surface of the broad ligament. It was noted that the right

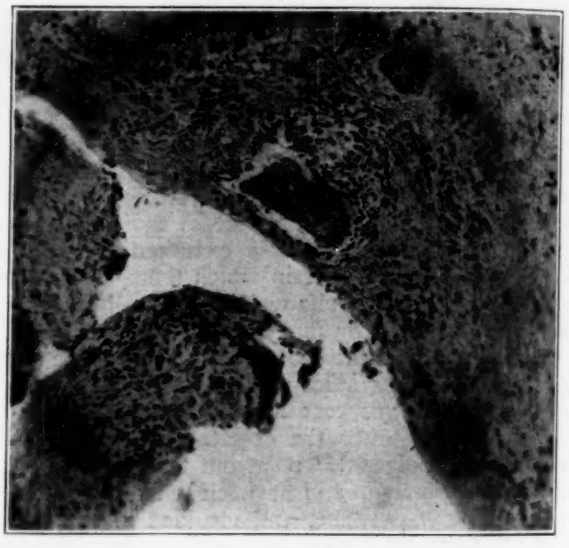

Fig. 3 (case 1).—Nodular serosal thickening, a giant cell showing an intracellular crystal at its lower margin (× 70).

tube was somewhat injected but apparently normal and patent. There was a small cyst on the right ovary. There were adhesions in the upper part of the abdomen from the previous cholecystectomy and appendectomy.

The left tube and ovary were removed. The small cyst was resected from the right ovary. The round ligaments were plicated and the abdomen was closed in layers without drainage. The pathologic diagnosis was "chronic cervicitis with chronic erosion, partial healing and scar tissue formation; chronic active suppurative salpingitis; congestion, edema and cystic degeneration of the ovary with atretic follicle cysts, one showing intracystic hemorrhage."

January 22 the patient was up in a chair and feeling well. Discharge from the hospital was discussed with the patient at this time.

On January 26 the patient complained of pain in the lower part of the abdomen. The complaint of pain was accompanied by an elevation of temperature, which on January 27 reached 101.4 F. An irregular temperature curve was charted until January 31, when the temperature returned to normal and remained there. The patient was discharged from the hospital on February 12. At this time it was felt that she probably had salpingitis on the right side. Bimanual examination revealed some evidence of thickening and involvement of the right tube. She was discharged from the hospital and instructed to take douches and rest at home. It was felt that the inflammatory

condition in the right side might subside. Her course at home was not satisfactory and she was readmitted to St. Vincent's Hospital on February 20. At this time she was afebrile. She complained, however, of pain in the lower part of the abdomen, distention and persistent obstipation. Good results were not obtained with enemas.

Flat plates of the abdomen did not reveal evidence of small bowel obstruction. Examination of the abdomen showed definite tenderness in the right lower quadrant and bimanual examination revealed considerable thickening and the suggestion of a mass in the region of the right tube and ovary. Because of the collicky pain, nausea and distention of the lower part of the abdomen, a diagnosis of partial obstruction was made despite the negative flat plates and likewise a diagnosis of right salpingo-oophoritis. Transfusions and infusions of saline solution were given and everything was done to enhance the patient's general condition.

The abdomen was reopened on February 27. The tissues of the abdominal wall appeared edematous. The omentum was densely adherent to the peritoneal surface of the abdominal wall in the region of the previous incision. The uterus could be palpated on the left side of the pelvis. There was a large mass in the region of the right tube and ovary which appeared to be an inflammatory condition of the tube with cystic degeneration of the ovary. The small bowel was densely adherent to all surrounding structures and there seemed to be little question from the appearance of the bowel that we were dealing with a tuberculous peritonitis. Tubercle-like structures were seen all over the small bowel in this locality.

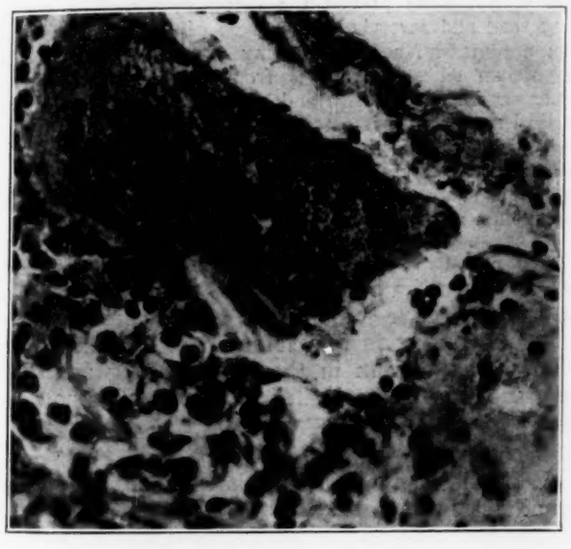

Fig. 4 (case 1).—Same as figure 3 but with a higher magnification (× 400).

The right tube and ovary were freed and removed and many adhesions of the small bowel, which were apparently causing partial obstruction, were freed by sharp dissection. Some of the tubercle-like bodies were removed for examination. After freeing the bowel and closing the peritoneum, merthiolated solution of amniotic fluid of cows (amfetin) was introduced through a catheter in the hope of preventing further adhesions. The abdomen was closed without drainage. The department of pathology was requested to go over the previous specimen again as we felt that tuberculosis might have been the causative factor in the condition which necessitated the first laparotomy.

The tube and ovary, when grossly examined, showed many small clear vesicles on the serosal surface and there was definite cystic change in the ovary. Subsequent pathologic study of the tissues resulted in the following diagnosis: "Subacute salpingitis with hyperemia and edema and many nodules of foreign body granuloma from magnesium silicate. Hyperemia and edema of the ovary with granulomatous nodules on the serosal surface also caused by magnesium silicate. A few atretic follicle cysts are also present."

It at once becomes apparent that magnesium silicate as the offending agent caused this patient to have a secondary laparotomy, to lose the remaining tube and ovary and to become quite ill because of the extensive inflammation and partial intestinal obstruction. This condition would not have occurred had not magnesium silicate been introduced into the patient's peritoneal cavity. Fortunately, she has made a good recovery following the second operation and will soon return to her nursing duties.

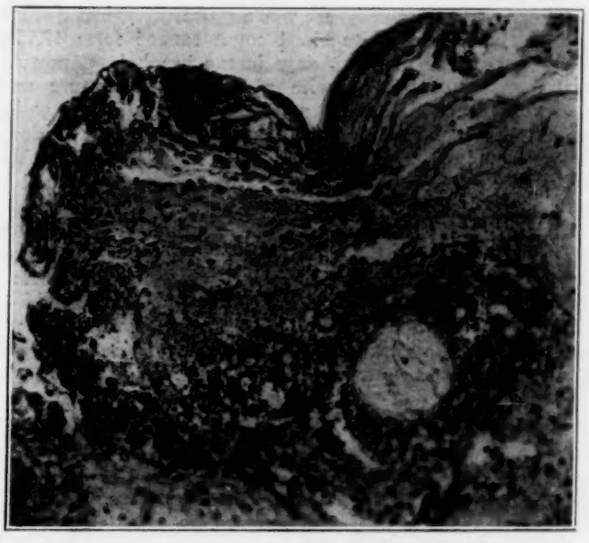

Fig. 5 (case 2).—Nodular serosal thickening with inflammatory infiltrate, hyperemic vessels and necrosis in the granulomatous area (× 70).

CASE 2.—A white woman aged 21, admitted to St. Vincent's Hospital Dec. 15, 1939, complained of severe, lancinating, generalized abdominal pain. There were fever, anorexia and general malaise.

Fig. 6 (case 2).—Granulomatous nodules undergoing fibrosis, one area showing hyperemic vessel and a marginal giant cell (× 70).

The patient had sharp pains in the abdomen radiating upward in the midline during the first day of her last menstrual period, December 10. Pain continued during the period and became more severe on December 14, at which time the pain was generalized. Vomiting had occurred at home. The patient described the pain in the lower part of the abdomen as similar to labor pains. She stated that her abdomen had been sore

to the touch and distended. Fever and profuse diaphoresis were noted before admission.

There was rigidity in the lower part of the abdomen and tenderness over the pelvic organs. Rebound tenderness was present. Vaginal examination revealed marked tenderness in the adnexal regions. Movement of the cervix caused her excruciating pain. No definite mass could be made out in the region of either tube or ovary. There was a purulent vaginal discharge, quite profuse. The white blood count ranged from 17,950 to 12,250 during the first two days in the hospital. Conservative treatment was employed with a fall in temperature and a disappearance of tenderness and improvement in the patient's general condition. She was discharged without operation on December 24 and sent home for continuation of treatment under the direction of the family physician. She was advised that operation might be necessary in the future.

The patient was readmitted to St. Vincent's Hospital Jan. 2, 1940, with a mass in the right side. There was no temperature and there were no contraindications to laparotomy. It was felt that further conservative treatment would be of no avail.

She was operated on January 3. The uterus, tubes and ovaries were found bound down in the pelvis by many adhesions. There were some adhesions of the small bowel.

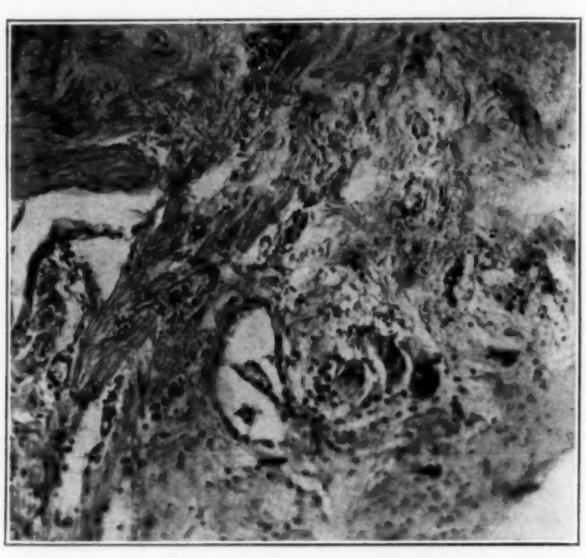

Fig. 7 (case 2).—Typical granulomatous area with multiple multinuclear giant cells; several small magnesium silicate crystals are present but are indistinct in this photomicrograph (× 70).

It was apparent that the right tube could not be saved. The right ovary appeared normal. The right tube, therefore, was removed and the right ovary was preserved. The adhesions about the left tube were freed and the tube was found to be patent in its entire length. The patient's age and her desire to bear children were taken into consideration and every effort was made to preserve tubal and ovarian tissue to the end that she might become a mother. The appendix was retrocecal and buried in its entire length. A routine appendectomy was done and the incision was closed without drainage. The cervical canal was dilated and treated with the actual cautery. The pathologic diagnosis was "subacute suppurative salpingitis; chronic interstitial inflammation with subacute activity in the appendix."

The patient was left, therefore, with the left tube and both ovaries. The postoperative course was uneventful and the patient was discharged on January 16 in good condition.

The patient was readmitted to the hospital on February 28. At this time she complained of pain in the left lower quadrant present for about four weeks. She stated that the menstrual flow had been profuse and vaginal bleeding seemed to be a prominent manifestation after discharge from the hospital. Tenderness and pain made their appearance in the lower part of the abdomen, particularly marked on the left side. Bimanual examination revealed a mass in the left tubo-ovarian region, and a tentative diagnosis of recurrent salpingitis and oophoritis was made.

The patient had fallen at home and had injured the left breast, and there was considerable bleeding from this wound. The loss of blood from the wound in the region of the breast and the loss of blood from the uterus combined to cause a secondary anemia. The patient's general condition was not exceptionally good.

The abdomen was reopened on March 1. The old median incision was resected and it was at once apparent that there had been considerable inflammation in the pelvis following the first operation. The left tube and ovary were bound down and there was adherent a section of the small intestine in this region. The right ovary appeared cystic. The adhesions in the area were freed and the left tube and ovary were freed and a supravaginal hysterectomy was done.

Subsequent pathologic examination of the uterus, right ovary, left tube and left ovary was reported as follows: "The section from the uterus shows fibrosclerosis, the blood vessels appear hyperemic, the mucosa shows small gland crypts and a rather dense cellular stroma. Two sections were taken from the tube and both areas show active inflammation, the tubal folds are almost completely destroyed, and the inflammatory infiltrate consists mostly of plasma cells and lymphocytes with a few eosinophils and polymorphonuclear leukocytes. Scattered through the tubal wall are areas of inflammatory cell infiltrate, many of these in and just beneath the serosa; these areas are particularly dense around the blood vessels. The serosa is roughened and several definite areas of granulomatous formation are present, some containing giant cells and crystals of magnesium silicate. Sections from the right ovary show a moderate degree of edema and hyperemia, a few atretic follicle cortical cysts were present and one retrogressing corpus luteum body. A section from the adherent and inflammatory omental tissue shows many granulomatous areas and fibrosclerosis. The granulomata show foreign body type giant cells many containing magnesium silicate crystals."

We feel that we are justified in the statement that magnesium silicate crystals were responsible for a serious postoperative complication in this case necessitating a second operation and loss of the generative organs of a young woman in the child bearing period. She has made an uncomplicated recovery and is now symptom free.

COMMENT

It should be remembered that magnesium silicate or talc is used extensively in operating rooms, in dressing rooms and also in the laboratory if rubber gloves are used dry. These crystals, therefore, may contaminate solutions, instruments and glassware and also dressings, so that they may be found on almost anything if examined microscopically. This is important in consideration of pathologic lesions as seen under the microscope, for crystals may be found while tissues are being examined under the microscope which have no part in the pathologic condition.

In order to connect these crystals with the pathologic condition they must be found in granulomatous areas and some will be found in the typical foreign body type giant cells that are always present in some parts of the lesions. We have found that slides prepared with albumin fixative and allowed to dry in the open air in the laboratory are particularly prone to have dust particles and often magnesium silicate crystals settle on and adhere to their surfaces; also, while areas are being selected for embedding and sectioning, the handling of the tissues with rubber gloves on which powdered talc is present may contaminate the tissue and be found in and on the sections. These words of warning are herein expressed so that no misleading observations will be reported and to avoid incriminating a few crystals in or on sections as an etiologic factor.

If rubber gloves are used in surgery, an excess of powder must be avoided; thorough washing of the

gloved hands will remove most of the powdered talc. The atmosphere of the operating room must be kept as free as possible of this powder so that possible foreign body lesions will not be produced by contamination of the operative area.

Often the finding of these crystals in the lesions is not easy, but careful examination with dim lighting will reveal these irregular shaped refractile bodies. Their presence in the giant cells is conclusive evidence that they are the offending factor.

SUMMARY

It is evident that in each of the two cases of granulomatous inflammation here reported the unsatisfactory postoperative condition was caused by magnesium silicate crystals and second laparotomies were made necessary. The thought must come to mind, as one considers these cases, that it is probable that many postoperative complications caused by magnesium silicate or lycopodium have gone undiagnosed. This may be especially true of postoperative intestinal obstruction.

The excessive and indiscriminate use of powder on the gloves and hands of the surgeon should receive serious consideration, as there is little doubt that these substances can and do cause serious complications. It should likewise be borne in mind that the use of rectal and vaginal suppositories covered with powder are not without danger, as nonhealing granulomatous lesions may occur following their use in the vagina and in the rectum.

Ohio Building.

CONGENITAL SHORT ESOPHAGUS WITH THORACIC STOMACH AND ESOPHAGEAL HIATUS HERNIAS

REPORT OF FORTY-SEVEN CASES

HOWARD F. POLLEY, M.D.

ROCHESTER, MINN.

Herniation of the stomach into the thorax by way of the esophageal hiatus is encountered with increasing frequency as efforts to diagnose or suspect it clinically are intensified by more relevant information regarding the condition. Various authors have attempted to define typical symptoms or symptom complexes since Bailey [1] in 1919 wrote of the thoracic stomach which was associated with a congenital short esophagus. We are now familiar with another similar but more common entity in which the esophagus is of normal length, best referred to as esophageal hiatus hernia. The present report presents a survey of forty-seven cases taken from the St. Luke's Hospital records in an attempt to analyze further clinically the symptom relationship. There were fourteen in which there was a congenital short esophagus with partial or complete thoracic stomach; thirty-three presented an esophageal hiatus hernia with varying degrees of stomach herniation. All presented positive roentgenographic, esophagoscopic or surgical confirmation of the diagnosis.

In the literature various classifications are proposed for esophageal hiatus hernias, among them embryology, etiology, trauma and nontrauma. Åkerlund [2] divides them into three types: (1) congenital short esophagus with partial or complete thoracic stomach, (2) esophageal hiatus hernia with an esophagus of normal length which does not form a part of the hernia (i. e. paraesophageal hernia) and (3) esophageal hiatus hernia in which the esophagus is shortened and the distal portion forms a part of the hernial contents. The important differentiation from the therapeutic point of view will be mentioned later. The term "para-esophageal hernia" used by Eppinger [3] also defines an esophagus of normal length fixed below the diaphragm with the cardia of the stomach passing upward closely adjacent to it. "Partial thoracic stomach" describes the stomach in association with a congenital short esophagus. Often it is difficult to distinguish accurately one type of hernia from another, even with the aid of laboratory procedures.[4]

ETIOLOGY

Anatomically the types differ. A congenital short esophagus with thoracic stomach is regarded as the result of incomplete embryologic development in which the stomach never has been below the diaphragm, usually has no enclosing hernial sac and is not a true herniation of a once normally placed organ. In esophageal hiatus hernias the herniated stomach constitutes a true hernia with a serous sac and the esophagus also extends below the diaphragm and may or may not extend back into the hiatus. Moersch [4] considers even this type of congenital origin, as are inguinal hernias, relaxation of the potentially weak rings induced by factors which increase intra-abdominal pressure, such as severe physical strain or exertion, pregnancy or vomiting. The two produce similar symptoms and diagnostic problems. Perhaps the main reason for differentiating the types concerns surgical therapy, because the congentital short esophagus type is not so amenable to the usual surgical methods of replacing the stomach into the abdominal cavity as the esophageal hiatus hernia in which the esophagus is of normal length.

The esophageal hiatus hernia, seen from childhood [5] to senility,[6] is more frequent in older persons. Age, therefore, is suggested as a contributing factor to its presence, because increasing age causes degenerative tissue changes with lack of muscular control of all muscle structures of the body. Other factors set forth by Åkerlund [2] include (1) stretching of the hiatus due to the insufficiency of surrounding muscle fibers, (2) decrease in the amount of fat tissue in the esophageal ring, (3) decrease in elasticity of the elastic fibrous tissue about the hiatus, (4) loosening of connective tissue between the esophagus and peritoneum and (5) the already mentioned increase in intra-abdominal tension.

These hernias occur equally in the two sexes and more frequently in patients past the fourth decade of life. The ages in this report range from 28 to 80 years, the average being 58.8 years. Twenty-five patients were women, twenty-two were men. The average age of the women was 59.7 years and of the men 58.8 years. More than half of the patients were between 51 and 70 years of age and nearly 90 per cent were more than 40 years (table 1).

From the Department of Medicine, St. Luke's Hospital, Chicago.

1. Bailey, P.: A Case of Thoracic Stomach, Anat. Rec. **17:** 107 (Oct.) 1919.

2. Åkerlund, Åke: Die Anatomische Grundlage des Röntgenbildes der sogen. "erworbenen Hiatusbrüche," Acta. Radiol. **14:** 523-544, 1933.

3. Eppinger, H.: Allgemeine und spezielle Pathologie des Zwerchfells, Vienna and Leipzig, A. Hölder, 1911.

4. Moersch, H. J.: Hiatal Hernia, Ann. Otol., Rhin. & Laryng. **47:** 754 (Sept.) 1938.

5. Clerf, L. H., and Manges, W. F.: The Congenitally Short Esophagus, J. A. M. A. **102:** 2008 (June 16) 1934. Findlay, Leonard, and Kelly, Brown: Congenital Shortening of the Esophagus and Thoracic Stomach Resulting Therefrom, J. Laryng. & Otol. **46:** 797-816 (Dec.) 1931. Clerf and Manges.[23]

6. Harrington, S. W.: Diaphragmatic Hernia: Results of Surgical Treatment in 210 Cases, California & West. Med. **50:** 399-401 (June), **51:** 27-31 (July) 1939.

Obesity, thought to be another definite factor in the etiology of hiatal hernias, is mentioned by only a few authors.[7] In this series, excess weight was a prominent factor. Of thirty-nine patients whose weight records were obtainable eleven, or 28.2 per cent, were 20 pounds (9 Kg.) or more overweight as determined by age, height and weight actuarial statistics whenever applicable, or by estimation based on the height and weight of the patients as determined by physical examination. Six patients, or 15.3 per cent, were 15 pounds (6.8 Kg.) overweight; nine, or 23 per cent, were moderately so (10 pounds, or 4.5 Kg.), and thirteen, or 33.3 per cent, were not significantly beyond the usual limits of normal or were classed as underweight (table 2).

The influence of obesity is said to be affected by (1) increasing intra-abdominal pressure which forces the cardia of the stomach through the nearby point of weakness, the esophageal hiatus [8] and (2) changes in the cell structure due to fat deposit in the tissues adjacent to the hiatus.[9] Obese patients may be much relieved of their symptoms on a weight reduction regimen. This often obviates the need of surgical treatments.

COINCIDENCE OF COLON DIVERTICULA

An interesting observation not previously noted in the literature on hiatus hernias concerns the incidence of diverticula elsewhere in the body of patients who have hernias through the esophageal hiatus. Thirty-three patients had a complete roentgenologic examination of the gastrointestinal tract. Of these sixteen, or 48.4 per cent, had diverticula of the colon, usually of the sigmoid region, and eighteen, or 54.5 per cent, had diverticula of the colon or other sections of the gastrointestinal tract. Of six with diverticula in more than one region of the gastrointestinal tract, three were in the duodenum and colon. Rankin,[10] who summarized the numerous reports of the literature on this subject, estimated the incidence of diverticula of the colon among patients more than 40 years of age at approximately 5 per cent. The incidence increases with age. The records of 422 consecutive routine complete gastrointestinal roentgenologic examinations in 1939 in patients over 40 years of age who were examined because of various symptoms of the entire gastrointestinal tract revealed an average age of 54.09 years. Only those over 40 years of age were included in the control group so as to correspond more closely to the age of the great majority of patients with hiatal hernias; their average age in this series was 58.8 years. The incidence of diverticula of the large bowel in this control group was 32.9 per cent. The 48.4 per cent incidence of colon diverticula in patients with esophageal hiatus hernias is almost a 50 per cent increase over that of the control group.

TABLE 1.—*Age and Sex Distribution*

Age in Years	Male	Female	Percentage of Total Cases
28-30	..	2	4.25
31-40	2	1	6.38
41-50	5	2	14.89
51-60	4	9	27.65
61-70	10	6	34.04
71-80	1	5	12.76
Total	22	25	99.97

SYMPTOMS

The symptomatology of hiatus hernia varies, depending on factors such as the progress of the disease when the patient is examined, the duration and rapidity of onset of symptoms [6] and the degree of stomach incarceration and associated spasm of the diaphragm and esophagus.[4] Most patients who present themselves for diagnosis or treatment of this condition have had symptoms a long time. The average duration of symptoms in the cases of this series was seven and three-fourths years (table 3).

TABLE 2.—*Summary of Data*

	Congenital Short Esophagus with Thoracic Stomach	Esophageal Hiatus Hernia of the Stomach
Number of cases	14	33
Degree of herniation		
Small	10	22
Medium	3	5
Large	..	2
Complete	1 (Negro)	..
Not specified	..	4
Age		
Range	37-75 years	28-80 years
Average	60.3 years	57.5 years
Sex		
Female	7 (1 Negro)	19
Male	7	14
Obesity		
20 pounds overweight	3	8
15 pounds overweight	0	6
10 pounds overweight	3	6
Not overweight	7	6
Questionable	1	7
Diverticula		
Esophagus	1	1
Duodenum	..	5
Jejunum	..	2
Cecum	1	..
Colon	5	11
No diverticula	4	9
Bowel not examined	4	11
Symptom classification		
Gastrointestinal	10	20
Cardiorespiratory	1	..
Mixed	2	11
None	1	2
Average duration of symptoms	(9 cases) 13 years	(25 cases) 5.9 years
Previous diagnosis	(7 cases) heart disease 4; cholecystitis 2; peptic ulcer; cancer of stomach; bronchitis	(14 cases) heart disease 4; obesity; gallbladder disease; cancer of stomach; duodenal ulcer; "hyperacidity"; pylorospasm; spastic colon; anemia; paresis; pertussis
Coincident pathologic changes	(9 cases) gallbladder 3; pylorospasm 2; spastic colon 2; diabetes; duodenal ulcer; rectal polyp; inguinal hernia; syphilis; hypertension	(26 cases) spastic colon 5; gallbladder 4; esophageal ulcer 4; gastric ulcer 3; heart disease 3; inguinal hernia 3; neurasthenia 3; duodenal ulcer 2; arthritis 2; anemia; tabes; diabetes; cardiospasm; pernicious anemia; alcoholism; morphinism; umbilical hernia; obstruction in small intestine; asthma; varicose veins; pregnancy, 7 mos.

For purposes of analysis, the symptoms may be classified into several groups after the plans of Cowan [11] and others:

Group 1, upper gastrointestinal symptoms, thirty patients.

7. Marks.[9] Moersch.[4]

8. Harrington, S. W., and Kirklin, B. R.: The Clinical and Roentgenologic Manifestations and Surgical Treatment of Diaphragmatic Hernia, with a Review of 131 Cases, Radiology **30**: 147-156 (Feb.) 1938.

9. Marks, J. H.: Diaphragmatic Hernia and Associated Conditions, Am. J. Roentgenol. **37**: 613 (May) 1937.

10. Rankin, F. W.; Bargen, J. A., and Buie, L. A.: The Colon, Rectum and Anus, Philadelphia, W. B. Saunders Company, 1934, pp. 138-140.

11. Cowan, I. I.: Diaphragmatic Hiatus Hernia, Am. J. Roentgenol. **37**:333 (March) 1937.

Group 2, symptoms simulating cardiorespiratory abnormalities, one patient.

Group 3, mixed symptom group, which includes the epiphrenal or von Bergmann syndrome, a gastrocardiac symptom complex due to irritation of the nerve endings in the esophageal hiatus with reflex manifestations of precordial pain through the sympathetic nervous system,[12] thirteen patients. This characteristic variation in the symptoms of hiatal hernia is discussed also by the Jacksons[13] and by Cowan.[11]

Group 4, asymptomatic group, three patients. A few in the first three groups may seem to some readers to belong to the group presenting no symptoms actually attributable to the herniation. This cannot be settled definitely at the present time. In Cowan's series, 7 per cent were asymptomatic; in the group collected at the Mayo Clinic, 7.7 per cent.[4] The three cases in the present report constitute a 6.3 per cent incidence.

Different authors seem to have a predominance of one or the other symptom groups in their series and future analyses of all reports will be needed to evaluate accurately these smaller group studies in the light of the total.

GROUP 1.—The most persistent complaint of all patients (table 4) with hiatal hernias is pain or distress during or soon after eating[14] and usually is localized in the epigastrium or substernal areas but occasionally in the right upper quadrant of the abdomen. There is often projection through to the back or to the left shoulder. The pain varies from a feeling of discomfort and fulness to a gnawing or burning, or to severe, sharp, colic-like pain, probably depending on the degree of stomach incarceration[4] and the action of the acid contents on the esophageal mucosa.[15] The distress or pain is associated with belching, heartburn and bloating. The pain may occur at night or when the patient lies in the supine position, a characteristic symptom when present. The aggravation of symptoms by lifting heavy objects, stooping or a sudden shift in body position rarely was encountered. These symptoms, when present, help make the presence of an esophageal hiatus hernia recognizable.

Nausea with or without vomiting, and regurgitation, especially following large meals, are common complaints. Regurgitation usually occurs immediately after meals or at night and often results in symptomatic relief, as does belching and emesis, at times self induced.

Several patients used alkalis and milk with varying degrees of relief, probably dependent on the extent of mucosal ulceration in the esophagus or herniated stomach. The use of alkalis, however, may cause the symptoms to be misinterpreted for those of peptic ulcer.[4]

Dysphagia, especially for solid foods, occurs in from 15 to 20 per cent of the cases.[16] It is thought to be more common in cases presenting congenital short esophagus with thoracic stomach but does occur in the other types of hiatal hernias and when there is constriction of the hiatal ring.[11] Dysphagia may be overcome by belching or emesis[4] or by the prone position.[9]

Gastric hemorrhage was present in four cases. Except for these, anemia rarely was encountered.

GROUP 3.—The age range of patients having esophageal hiatus hernias and other coincidental pathologic changes render it difficult at times to interpret accurately the symptoms in mixed symptom groups. Of the thirteen patients in this group, ten presented a combination of cardiorespiratory and gastrointestinal symptoms; eight had dyspnea of varying degrees as the main complaint, associated with palpitation in five cases; eight had precordial pain or fulness and two had constricting sensations with the chest pain. One had pain which radiated into the neck and down the left arm; another had radiation down the right arm to the finger tips, so that in many of this type a presumptive diagnosis of angina pectoris or organic heart disease is made. The analogy of complaints with the symptoms of angina pectoris is noted and discussed by Truesdale,[17] who states that the differentiation from actual anginal attacks of coronary disease may be aided by the atypical radiation of pain to the back, its occurrence without relation to effort, and the limited degree of heart disease. Two patients had radiation of chest pain to the left shoulder; in one of these it was at times related to food intake.

Nonproductive cough was more than an incidental finding in four instances. The cough precipitated the epigastric symptoms in one case. Another patient had a "stomach cough" with heartburn after meals, as well as a chest cough.

TABLE 3.—*Duration of Symptoms*

Duration	Number of Cases
Less than 1 year	9
1- 5 years	6
6-10 years	12
11-15 years	3
16-20 years	2
21-25 years	1
More than 25 years	1
Average, 7¾ years	
Total	34

In this group, all had epigastric pain, frequently accompanied by nausea and vomiting and regurgitation, though most patients presented themselves primarily because of cardiorespiratory symptoms.

One patient (group 2) had only cardiorespiratory symptoms characteristic of angina pectoris and associated with occasional belching. Vague symptoms of dyspnea, palpitation and fatigue with electrocardiographic evidence of a 4:1 heart block and auricular flutter known to be present for two years were present in another case better placed in the asymptomatic group 4. Two other cases are placed in this group. Less emphasis is being placed on the symptom-free group, though some authors have stated that "a clinical diagnosis or even a surmise of a diaphragmatic hernia is scarcely to be expected."[18] This opinion has been shared also by Hedblom,[19] Morrison and his co-workers[20] and Ritvo.[21]

12. von Bergmann, G.: Das "Epiphrenale Syndrom," seine Beziehung zur Angina Pectoris und zum Kardiospasmus, Deutsche med. Wchnschr. **58**: 605-609 (April 15) 1932.
13. Jackson, D. E., and Jackson, Helen: Experimental and Clinical Observations Regarding Angina Pectoris and Some Related Symptoms, J. Lab. & Clin. Med. **21**: 993-1006 (July) 1936.
14. Giffin, H. Z.: Diagnosis of Diaphragmatic Hernia, Ann. Surg. **55**: 388-399 (March) 1912. Harrington.[6] Moersch.[4] Morrison, Morrison and Delaney.[20]
15. Glatt, M. A.: Congenital Short Esophagus with Partial Thoracic Stomach, Arch. Otolaryng. **24**: 612-617 (Nov.) 1936.
16. Monkhouse, J. P., and Montgomery, S. K.: Seven Cases of Congenital Short Esophagus with Partial Thoracic Stomach, J. Laryng. & Otol. **48**: 743-753 (Nov.) 1933. Cowan.[11] Moersch.[4]
17. Truesdale, P. E.: Diaphragmatic Hernia at the Esophageal Hiatus, the Short Esophagus and Thoracic Stomach, New England J. Med. **212**: 240-250 (Feb. 7) 1935.
18. Moore, A. B., and Kirklin, B. R.: Progress in the Roentgenologic Diagnosis of Diaphragmatic Hernia, J. A. M. A. **95**: 1966-1969 (Dec. 27) 1930.
19. Hedblom, C. A.: Diaphragmatic Hernia, Ann. Int. Med. **8**: 156-176 (Aug.) 1934.
20. Morrison, L. B.; Morrison, S. L., and Delaney, J. H.: Herniation of the Fundus of the Stomach Through the Esophageal Hiatus: with Special Reference to Its Roentgenologic Diagnosis, New England J. Med. **210**: 624-633 (March 22) 1934.
21. Ritvo, Max: Hernia of the Stomach Through the Esophageal Orifice of the Diaphragm, J. A. M. A. **94**: 15-21 (Jan. 4) 1930.

No relationship between the severity of symptoms and the length of the esophagus or size of the hernia could be demonstrated. Often the severity of the symptoms exceeds the degree of herniation [17] and seemingly depends on the degree of mucosal ulceration. Bloch [22] suggests that symptoms of long duration indicate the presence of a congenital short esophagus with the thoracic type of stomach.

DIAGNOSIS

Accurate diagnosis of hiatus hernia is important because of complications which may arise (1) by confusion with other organic diseases of the abdomen and thorax and (2) by permitting the herniation to progress without treatment. Coexisting pathologic conditions often make evaluation of the symptoms difficult. Gallbladder disease, peptic ulcer, heart disease, malignant conditions of the cardia or esophageal and intestinal

TABLE 4.—*Incidence of Symptoms*

	Congenital Short Esophagus with Thoracic Stomach			Esophageal Hiatus Hernia of the Stomach				
Herniation	Small	Medium	Complete	Small	Medium	Large	Not Specified	Totals
Epigastric pain after eating	8	2	1	19	5	1	3	39
Nausea and vomiting	3	1	..	11 (blood 3)	3	1 (blood)	3	22
Belching	4	2	..	10	2	1	2	21
Pyrosis	5	1	1	4	2	..	2	15
Regurgitation	3	1	1	7	1	..	1	14
Night pain	4	..	..	5	2	..	..	11
Dysphagia	1	..	1	6	..	..	..	8
Dyspnea	1	..	..	4	..	1	..	6
Chest pain	1	1	..	5	..	..	..	7
Cough	2	..	..	2	..	..	..	4
Palpitation	..	..	..	4	..	1	..	5
Anginal pain	2 (both arms, especially left, without effort 1) (left arm 1)			3 (both arms 1) (left arm 1) (right arm 1)				5
Aggravation of symptoms by	Greasy and fried foods 3; large meals 2; supine position 2; lying on left side; tobacco; orange			Greasy and fried foods 3; large meal 2; lifting; bending suddenly; fatigue; lying on left side; supine position; meats; tomato; apple; beans; evening meal				
Relief of symptoms by	Alkalis 3; belching 2; food; emesis; upright position; colonic irrigation			Alkalis 9; emesis 7; food 3; belching 3; regurgitation 2; small meals 2; upright position; dry foods; gastric lavage; cold to abdomen				

obstructions may present symptoms not unlike those of hiatus hernia. Unnecessary surgical intervention because hiatus hernia was not ruled out in the differential diagnosis is reported.[6]

Since a symptom complex cannot be definitely established for the diagnosis of hiatus hernia, it is important that this entity be searched for constantly and kept in mind whenever the differential diagnosis of thoracic, cardiac or abdominal conditions, especially those of more serious portent, presents itself.

In every case, clinical suspicion of this entity must be confirmed by laboratory procedures, especially the roentgenologic study. Briefly, the technic of the x-ray search for hiatus hernias consists in routine fluoroscopy, and the examination of all patients in either the horizontal or the Trendelenburg position or both, with ingestion of the opaque meal while in these positions. In many instances, especially with small hernias and no adhesions, the lesion may be demonstrable only by this procedure when a portion of the full stomach protrudes through the esophageal hiatus when the opaque meal is being swallowed or during inspiration. The x-ray diagnosis of the congenital short esophagus is made as follows: (1) A portion of the cardia, as evidenced by longitudinal rugae markings, must be shown to stay above the level of the diaphragm and (2) the esophagus must be shown to be too short to reach as low as the level of the diaphragm, with no change by postural variations. Often there is a narrowing at the esophagogastric junction, and the cardia above the diaphragm may fill only after the rest of the stomach has been filled or when the patient is in the right oblique or prone position, which places the hiatus higher than the upper end of the esophagus.[23]

The use of esophagoscopy in the diagnosis of these entities is advocated as a routine procedure in all suspected cases, especially when surgery is contemplated.[24] Esophagoscopy is of value in studying the conditions of the esophagus, especially ulceration, in determining the presence of pathologic changes in the lower end of the esophagus, in measuring the length accurately and in obtaining mucosal biopsy of suspected gastric tissue when indicated. In a congenitally short esophagus a narrowing at the esophagogastric junction is found with the dilated portion below this level lined with gastric mucosa and no evidence of a normal diaphragmatic hiatus. The esophagus in the esophageal hiatus hernia is usually more redundant with less pronounced narrowing at the esophagogastric junction.[4]

Roentgenologic examination being simpler and less objectionable to the patient than esophagoscopy, it would seem that the latter could be restricted to persons presenting inconclusive x-ray evidence.

TREATMENT

The treatment of hiatus hernia varies with the type of hernia, the age of the patient, the presence of complications and the severity of symptoms. Esophageal bouginage is beneficial in the treatment of the narrowing at the esophagogastric junction in the congenital short esophagus with partial thoracic stomach, especially in children. If no relief is obtained, Harrington [6] advises surgical exploration, as it is sometimes possible even in these cases to replace the stomach in the abdominal cavity with subsequent relief of symptoms. The reader is referred to the articles by Harrington on the technic of the surgical treatments of hiatus hernias.

Before surgery is recommended, it is advisable that most patients with hiatal hernias be given a period of conservative management. This is especially true of obese patients who present themselves for surgery, but many of whom need no radical surgical procedures after medical management.

Besides the reduction of excess weight, the essentials of medical treatment include a diet schedule of smaller meals at more frequent intervals, so that the patient eats four, perhaps five, meals a day. The diet should be nonirritating and exclude foods with a tendency to gas formation causing greater stomach distention. The largest meal should be at noon, with a light, rather dry diet in the evening to decrease the tendency for pain at night and for regurgitation. Thorough mastication of the food is important. Smaller meals do not

22. Bloch, Leon; Serby, A. M., Salinger, Samuel: Thoracic Stomach with Short Esophagus, Am. J. Digest. Dis. & Nutrition **3**: 689 (Nov.) 1936.

23. Clerf, L. H., and Manges, W. F.: Congenital Anomalies of the Esophagus with Special Reference to the Congenital Short Esophagus with a Portion of the Stomach Above the Diaphragm, Ann. Otol. & Laryng. **42**: 1058 (Dec.) 1933.

24. Clerf and Manges.[5] Findlay and Kelly.[5] Glatt.[15] Harrington.[6] Moersch.[4]

distend the stomach so greatly and presumably permit peristalsis below the diaphragm without restriction or compression, whereas peristaltic activity in a distended stomach may act to force the constriction of a portion of the cardia through the enlarged or weakened hiatal ring. Decrease in bulk facilitates the relief of other symptoms of the upper gastrointestinal tract and allows the previously injured mucosa to repair itself.

The patient is instructed not to lie down for several hours after a meal; this also aids in overcoming the regurgitation. A restriction of exercise sometimes is indicated. Wood chopping, horseback riding, golf and other activities requiring frequent stooping or bending of the trunk of the body so as to increase intra-abdominal tension are harmful.

Patients with symptoms of ulceration of the esophageal mucosa or herniated gastric mucosa are usually adequately managed with peptic ulcer therapy, alkalis and antispasmodics. Calcium carbonate in from 10 to 20 grain (0.65 to 1.3 Gm.) doses is preferred to sodium bicarbonate because its lesser solubility may cause less rapid formation of gas in the stomach with less resultant distention.

Advanced age and the presence of serious coincidental pathologic changes are frequent contraindications to surgical repair of hiatus hernias. These patients may benefit from a planned medical regimen. When no symptoms are referable to the hernia and the hernia is not large enough to interfere with vital body functions, treatment is not necessary.

SUMMARY

1. In a series of forty-seven patients with nontraumatic esophageal hiatus hernia, congenital short esophagus with partial or complete thoracic stomach was present in fourteen. The average age was 58.8 years, almost 90 per cent of the patients being more than 40. Predominance of one sex over the other was not noted.

2. All the cases were considered as actually or essentially congenital. Age and obesity are thought to be contributing factors in the presence of a congenital potentiality for herniation through the esophageal hiatus.

3. There was a high incidence, 48.4 per cent of this series, of coexisting diverticula of the large bowel; this is a previously unreported observation.

4. The most common symptom was epigastric pain or distress after eating (83 per cent), associated with bloating and belching (44.7 per cent), and heartburn (31.9 per cent). Nausea and vomiting (47 per cent) and regurgitation (30 per cent) are frequent complaints. Other characteristics, less often encountered, included night pain (23.4 per cent), dysphagia (17 per cent), dyspnea (12.7 per cent), chest pain (14.9 per cent), gastric hemorrhage (8.5 per cent), anginal pain and cough.

5. No relationship between the severity of symptoms and the type or size of hiatus hernia could be demonstrated.

6. It is exceedingly important that hiatus hernia be ruled out in all suspicious or atypical cases because of the greater seriousness of other diseases of the thorax, heart and upper part of the abdomen.

7. The clinical evidence should be substantiated by roentgenoscopy and by esophagoscopy if x-ray evidence is inconclusive or if surgery is contemplated.

8. The essentials of medical treatment include weight reduction, dietary regulation, use of antispasmodics and peptic ulcer management when indicated, and selective restriction of physical activity.

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ISOIMMUNIZATION IN PREGNANCY

ITS POSSIBLE BEARING ON THE ETIOLOGY OF ERYTHROBLASTOSIS FOETALIS

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A number of transfusion accidents in pregnancy have been reported in the literature, even though the donor, frequently the husband, was in the same blood group as the patient.[1] In one instance analyzed by Levine and Stetson [2] it was assumed that the accident could be attributed to an agglutinin resulting from immunization of the mother by factors in the fetus inherited from the father.

Analysis of a series of 12 cases in which atypical agglutinins could be demonstrated revealed the significant fact that these patients presented obstetric histories characterized by a number of complications such as toxemia, macerated fetus, repeated abortions, miscarriages or stillbirths.[3]

Recently 5 additional patients with atypical agglutinins were observed, 3 of whom gave birth to infants suffering from erythroblastosis foetalis. The obstetric histories of these cases are so striking as to merit brief mention.

One patient, J. L. (decigravida, sextipara), now pregnant and under observation, had three spontaneous abortions and six full term pregnancies with living babies, five of whom survived only one to three days. In at least three of these five babies there is clinical or pathologic evidence to support a diagnosis of erythroblastosis foetalis. The blood of this patient was studied for agglutinins because of the remarkable history of repeated abortions and neonatal deaths.[3a]

Another patient, R. C. (group O), had three pregnancies, the first and third of which resulted in neonatal deaths with postmortem evidence of erythroblastosis. The third infant showed pronounced anemia, and blood smears revealed a large number of peripheral normoblasts. During the second pregnancy the fetus died in utero at eight and one-half months. This patient was called to our attention because of anuria following a transfusion of her husband's blood, which was also in group O. It is of interest that atypical agglutinins in

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Drs. Ralph L. Barrett, Ralph A. Hurd, John N. Pannullo, Donald Z. Rhoads and Greta Stohr cooperated in supplying histories and specimens in several cases. Drs. William Antopol and Lester Goldman were consulted with regard to pathologic and hematologic aspects.

1. Levine, Philip, and Polayes, S. H.: Ann. Int. Med., to be published. Wiener, A. S., and Peters, H. R., ibid. **13**: 2306, 1940. Levine and Stetson.[2]

2. Levine, Philip, and Stetson, R. E.: Unusual Case of Intra-Group Agglutination, J. A. M. A. **113**: 126 (July 8) 1939.

3. Levine, Philip, and Katzin, E. M.: Proc. Soc. Exper. Biol. & Med. **45**: 343, 1940.

3a. This patient has since delivered, and the infant exhibited classic symptoms of erythroblastosis foetalis.

this case could not be demonstrated in the specimen drawn the day after the transfusion. This was to be expected, since the donor's blood, still present in the patient's circulation,[4] had specifically absorbed the atypical agglutinin, which reappeared in the serum several days later.

The blood of a third patient, E. F. W. (group O), was sent to us because the infant suffered from erythroblastosis foetalis as evidenced by the clinical condition and the characteristic blood picture. The blood of the mother, drawn two days after a transfusion with her husband's blood (group O), did not contain any atypical agglutinins because in this instance also it could be shown that the blood of the donor (her husband) was still present in her circulation. The serum of this specimen was distinctly icteric. However, a specimen drawn six days after the transfusion contained atypical agglutinins active on the cells of her husband and other donors of group O. That the patient did suffer from a transfusion reaction was evidenced by jaundice, oliguria and nitrogen retention.

The past obstetric history of this patient (E. F. W.) reveals one spontaneous abortion followed by birth of a normal living infant. During this pregnancy the patient was distinctly toxic, as evidenced by rise in blood pressure, albuminuria and edema.

Of the remaining two patients in whom atypical agglutinins were found, one patient (L. L., primipara, quadrigravida) had two miscarriages and a premature baby who survived only four days. The presence of atypical agglutinins in this case, observed after the fourth pregnancy, was not associated with any complications in either mother or baby.

Outcome of Thirty-Six Pregnancies in Seven Patients

Normal babies	10	
Babies with erythroblastosis	6	
Neonatal deaths	3	
Stillbirths	5	
Abortions or miscarriages	10	(at least 6 spontaneous)
No data available	2	

The fifth patient (F. Z., octipara, undecigravida) had two miscarriages. Unfortunately the details of the past obstetric histories are not available. The eleventh pregnancy was characterized by placenta praevia, for which condition a cesarean section was performed and a macerated male fetus was delivered. The patient was given a transfusion the day of the operation but developed jaundice and anuria, which terminated fatally twelve days later. Atypical agglutinins were demonstrated in a blood specimen obtained just before death.

Two other cases of erythroblastosis foetalis can be recorded, in only one of which were atypical agglutinins demonstrated. This patient (G. B., quadrigravida, primipara) mentioned in our previous publication,[3] had two spontaneous abortions and one normal full term infant. In the fourth pregnancy the baby, which died during labor, was delivered by cesarean section. A clinical diagnosis of fetal hydrops was made, but a necropsy was not performed. The blood of this patient (group A) was examined on the fourth postpartum day, four days after a transfusion with her husband's blood (group A). Atypical agglutinins could be demonstrated which acted on numerous bloods of groups O and A. This patient died of transfusion anuria on the ninth day.

Patient J. B. (primipara, secundigravida) had a full term hydrocephalic macerated fetus in her first pregnancy. In the second pregnancy, the fetus died in the sixth month. A decidedly edematous fetus dead about six days was delivered spontaneously; the placenta was edematous and two to three times the normal size. Sections of the liver showed striking evidence of extramedullary hemopoiesis. The patient was given a transfusion the day before delivery with presumably compatible blood. The blood of this patient was examined only on the fourth day after the transfusion and five days prior to her death. No agglutinins could be demonstrated, probably because of specific absorption by the donor's blood, as indicated.

Serologic tests for syphilis in these cases were negative.

It is probable that there is a connection between the occurrence of these complications and the presence of immune agglutinins in the mother. This relationship lends itself readily to form a theoretical basis for the etiology of at least some cases of erythroblastosis foetalis. "This condition occurs late in uterine life, although its manifestation may not appear until shortly after birth. A striking familial incidence is found in many cases." [5] The hypothesis of isoimmunization can readily explain the familial incidence of this condition.

The blood picture characteristic of erythroblastosis foetalis, i. e. destruction of red cells and compensatory reaction of the bone marrow, can also be explained in terms of the isoimmunization theory. One may assume that the agglutinins in the mother's circulation under certain conditions are capable of penetrating the placental barrier so that these antibodies, by their continual action on the blood cells and perhaps tissue cells of the fetus, induce erythroblastosis foetalis and its several manifestations. In the presence of a sufficient concentration of agglutinins the fetus may die in utero.

A similar explanation may also hold for some stillbirths, miscarriages and abortions—at least as far as the cases presented are concerned.

The question of the specificity of the agglutinins involved will be discussed in further publications, but there is sufficient evidence to indicate that most of these serums contain an agglutinin which parallels the anti-Rh agglutinin of Landsteiner and Wiener.[6] Rh is an antigen present in the red blood cells of Macacus rhesus monkeys and in about 85 per cent of human beings.

SELECTION OF COMPATIBLE DONORS IN THE CASES DESCRIBED

Obviously, blood grouping tests with potent anti-A and anti-B serums followed by a cross matching must be performed with great care. It is safer to look for compatible donors among the patient's blood relatives than to use the husband. Preferably, transfusions should not be performed if the patient is under an anesthetic. In view of the fact that the blood of many of the patients studied does not contain the Rh antigen, a list of Rh negative donors should be available. It is hoped that methods will soon be found for the preparation of potent immune anti-Rh serums in rabbits or other animals.

4. The red cells of the donor (type MN) was demonstrated in the patient's blood (type M) by the method described by Landsteiner, Levine and Janes (Proc. Soc. Exper. Biol. & Med. **25**: 672, 1928).

5. Diamond, L. K., in Symposium on the Blood and Blood-Forming Organs, Madison, Wis., University of Wisconsin Press, 1939, p. 66.

6. Landsteiner, K., and Wiener, A. S.: Proc. Soc. Exper. Biol. & Med. **43**: 223, 1940.

ADDENDUM

Since the manuscript was submitted, anti-Rh agglutinins were demonstrated in the blood of 3 additional patients who delivered infants suffering from erythroblastosis foetalis. In 3 other cases, however, atypical agglutinins could not be found although the tests were made soon after delivery. In two of the latter and in an additional case the mother's blood contained the Rh factor, indicating that other blood factors may be involved or that an alternative explanation of the etiology exists for some cases.

The bloods of five other mothers of infants with erythroblastosis foetalis were examined at three months to three years after the delivery. In each case the mother's blood was negative for Rh while the husband's blood was positive in 4 cases tested. The blood of six infants in whom the diagnosis of erythroblastosis foetalis was made was found to contain the Rh factor.

The concept of an antigen-antibody reaction as a basis for the etiology of erythroblastosis foetalis has been previously mentioned by Ottenberg [7] and Darrow.[8]

Clinical Notes, Suggestions and New Instruments

GAS BACILLUS GANGRENE OF LUNG

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Gangrene of the lung is a rare condition when compared to the frequency of the pneumonias, pulmonary abscesses and infarctions. It is usually secondary to other lung infections but may develop without a definite precursor. Severe debility is almost invariably associated with the diffuse form of pulmonary gangrene such as follows diabetes mellitus, protracted fevers, carcinoma or tuberculosis. Lung abscesses or bronchiectatic cavities secondary to pressure rarely become gangrenous. Large septic infarcts mays quickly develop into gangrene. Likewise, pneumonic areas secondary to aspiration of infected material from the upper respiratory tract, such as occurs after anesthesia, may be the forerunner of gangrene.

Bacteria associated with pulmonary gangrene are usually of multiple types. Among the more commonly found organisms are Streptococcus pyogenes, staphylococci, pneumococci, fusiform bacilli and the Spirochete of Vincent. The association of pulmonary gangrene with extensive gas bacillus infection of the lungs is mentioned but little in the literature. Autopsy reports and textbooks on pathology imply that anaerobic bacteria are frequently found along with other organisms in the necrotic lung tissue but give the impression that they were not of great importance in causing destruction of tissue. In the case to be presented here gas bacillus organisms played the leading part in the gangrene of the lung, as shown by the conditions found on radiographic examination and at autopsy.

REPORT OF CASE

D. B., a farmer aged 41, 5 feet 8 inches (173 cm.) tall, entered Burge Hospital April 3, 1940, in the service of Dr. Robert Glynn, complaining of shortness of breath and injuries from a fist fight a week before. His past history was essentially negative except that he had worked for six years in a lead and zinc mine; he quit the mine and took up farming because of bad health. The family history was essentially negative. He had been married sixteen years and his wife had had no pregnancies. The patient was in a fist fight one week before entrance to the hospital. After the fight the patient lay unconscious for two or three hours. He was weak from loss of blood and from having some of his teeth knocked out. He continued to get weaker and more dyspneic. The day before entrance to the hospital the patient complained of a knifelike pain in the right lower part of the chest. He had been spitting up blood more or less continuously since onset of the present illness.

Physical examination revealed that the patient was poorly developed, poorly nourished and dyspneic, with many ecchymotic areas over the face. There was no evidence of a skull injury. The scleras were discolored from an old conjunctival hemorrhage. The pupils were equal and reacted promptly to light and to distance. Ocular movements were normal. The ears, nose and throat were normal. The breadth had a foul odor and the tongue was heavily coated. Examination of the lower jaw revealed sockets of recently removed teeth filled with foul smelling clotted material. The remainder of the teeth were carious and the gum lines were retracted. The submaxillary gland on each side was palpable. The neck was freely movable. The thyroid was not enlarged. The chest was emaciated with an increase of the anteroposterior diameter. The respiratory rate was 26; movements were shallow and restricted on the right side. Breathing was noisy with asthmatic wheezing. Percussion showed hyperresonanace on both sides of the chest except for dulness over the right lower portion. Blowing breath sounds were heard over the anterior right lower part of the chest, while posteriorly dry crackling rales were heard. The sputum was thick and foul smelling. The heart was of average size and in the normal location, and cardiac sounds were essentially negative. The cardiac rate was from 80 to 90 and regular, and the blood pressure was 130 systolic, 100 diastolic. The abdomen and genitalia were normal and reflexes were normal.

Examination of the sputum revealed 3 dust cells per high power field and a large number of pus cells. No tubercle bacilli were found.

A blood count showed red cells 4,350,000, white cells 9,750, hemoglobin content 80 per cent, with a color index of 0.9; the differential count was eosinophils 1 per cent, stab cells 18 per cent, segmented cells 51 per cent, lymphocytes 25 per cent and monocytes 5 per cent. The Kahn test gave a negative reaction. The urine was amber, clear and acid, specific gravity was 1.025, tests for albumin and sugar were negative and there was an occasional pus cell.

X-ray examination of the chest showed that the apexes were clear. An area of fibrosis extended from the right hilus toward the right base with questionable cavity formation. Punctate fibrosis was noted along each bronchial marking throughout the lung fields. The right lower lobe was retracted toward the heart and adherent to the diaphragm. Many air containing sacs were noted in the right lower lobe. The lower left lobe was also adherent to the diaphragm. An x-ray diagnosis of first stage silicosis, bronchiectasis and possible lung abscess was considered.

Clinically the patient had a typical attack of asthma at the time of admission to the hospital. A lung abscess was seriously considered in spite of the questionable x-ray studies. Bronchiectasis was thought to be the basis of the dilated air sacs in the right lower lobe. The oral sepsis no doubt added insult to injury.

During the first two days in the hospital the patient was quite comfortable. His temperature was of the septic type and his pulse varied between 80 to 100 a minute. On the third hospital day the patient became much worse; his temperature rose to 103.2 F. and his pulse to 140 and his color became cyanotic. He was placed in an oxygen tent and given intravenous dextrose and cardiac stimulants. He rapidly became moribund, the temperature went up to 105.2 F. and the pulse became so weak and rapid that it could not be counted. The patient died at 3:20 a. m., April 7. Dr. E. B. Hanan did the autopsy.

AUTOPSY

Gross Examination.—Two incisors were absent in the upper jaw and the right canine was loose. In the lower jaw one incisor was missing and one was out of line from its fractured socket,

7. Ottenberg, Reuben: The Etiology of Eclampsia, J. A. M. A. **81**: 295 (July 28) 1923.
8. Darrow, R. R.: Icterus Gravis Neonatorum, Arch. Path. **25**: 378 (March) 1938.

as evidenced by the sensation of grating when an attempt was made to straighten the tooth. A bloodlike fluid exuded from the mouth.

The abdomen was tense; the intestine was distended with gas; there was no evidence of a ruptured viscus. The liver, gallbladder, stomach, spleen, pancreas and intestine did not grossly show any essential abnormality. The kidneys, bladder and prostate were essentially normal.

When the thoracic cavity was opened it was seen that an emphysematous border of the right lung had pushed the anterior mediastinum to the left.

The lower lobe of the right lung was a dirty gray, mottled with black pigment. The upper lobe was a darker red with the same pigment markings. The base of the lower lobe adhered to the diaphragm, forming a pocket containing about 250 cc. of a dark, foul smelling fluid. This cavity lay within the visceral pleura and involved the lung tissue. The bronchi and blood vessels extended across the sides of the opacity; the lung tissue was black and fragile. In the upper part of the cavity in the region of the main inferior bronchus was a thinly encapsulated mass, fairly firm in consistency. On section this mass appeared to be caseous. The lateral and medial portions of the lower lobe were gray on section and had the consistency of liver tissue. Pleural adhesions extended along the mediastinal border of the right base to the hilus. The apex of the upper lobe adhered firmly to the body wall and lighter adhesions extended along the lateral border of the lung to the base. When the lung was removed from the chest cavity crepitation was absent in the lower lobe, but on section a foul smelling gas escaped from the necrotic lung tissue and on pressure a dark red, foul smelling fluid escaped. The hilar lymph nodes were matted together in large calcified masses, one mass being lobulated and about the size of a small tangerine. The bronchi were filled with a dirty gray exudate and the terminal bronchi in the region of the inferior main bronchus were involved in the necrotic process at the right base.

Appearance of the lower right half of the chest. Note the possible cavity of lung abscess close to the right hilus. The right lower lobe is retracted toward the mediastinum and is adherent to the right side of the diaphragm. Numerous dilated air sacs are shown in the right lower lobe.

The left thoracic cavity contained about 150 cc. of a clear brown fluid. The apex of the left lung was firmly adherent, the adhesions extending down the posterior surface of the lung to the diaphragm. Adhesions were also present along the mediastinal border from the apex to the hilus. The lung surface was dark. The lung tissue was definitely emphysematous with many large distended blebs at the base. The hilar glands were enlarged, many showing calcification but not to the marked extent previously described in the right hilus. On section the lower lobe was bright red and a dark foamy fluid escaped on pressure. On section the cut surface of the upper lobe was mottled, varying from a dark red to a light gray, and did not crepitate on pressure. The bronchi contained a dirty gray exudate. A dark gray foamy fluid escaped on pressure.

The heart was small. When the pericardium was opened about 50 cc. of a brown fluid was present in the pericardial space. The visceral pericardium showed a grayish mottling and the coronary vessels were congested. The right side of the heart was empty; tricuspid and pulmonary semilunar valves were normal. The left side of the heart contained fluid blood; mitral and aortic semilunar valves were normal. The coronary orifices and arteries were normal. The aorta was normal except for atheromatous plaques in the intima of the ascending portion. The posterior mediastinal nodes were enlarged, many showing calcification which was apparently a continuation of the process as previously noted in the hilar nodes.

The cranium was intact with no evidence of fracture of the bones of the skull. The meninges were normal in appearance. The cortical surface of the brain was obviously edematous and congested, but no gross hemorrhage was demonstrable. On section of the brain no gross abnormality was found except a diffuse edema.

Microscopic Examination.—Sections from various regions of the lung showed various stages of acute inflammatory processes; in many areas the alveoli were filled with a fibrinous exudate; the walls of the alveoli in many places were necrotic. Histologic sections of the thinly encapsulated mass previously described in the right lung proved to be an area of organized pneumonia. There was considerable replacement of fibrosis tissue. Terminal bronchi in many places were obliterated; in some areas they had disintegrated. Near the center of this reaction there was diffuse hyaline degeneration. In the periphery of this mass there was localized abscess formation. In the lung tissue adjacent to this mass there was an acute inflammatory reaction resulting in diffuse necrosis of lung tissue with its resulting hemorrhage and thrombosis of vessels.

The pulmonary lymph nodes showed much congestion and necrosis. The afferent vessels of the lymph nodes were filled with organizing thrombi.

The outstanding picture of the spleen was one of hemorrhagic necrosis. Many of the splenic lymph follicles had disappeared. Splenic vacuoles were increased in number while some of the follicles were completely destroyed by necrotic processes.

The liver showed necrosis of the central vein. The liver cells of the periphery of these necrotic areas contained bile and blood pigment.

The pancreas showed no abnormality.

The kidneys showed extensive congestion of the tufts of the glomeruli. The principal pathologic condition was distributed to the tubular areas; the epithelium of the tubules showed fatty degeneration. In the larger collecting tubules the epithelium was necrotic; in many other areas the epithelium was desquamated. Others showed interstitial hemorrhage. Many of the tubules were filled with pink hyaline casts.

Bacteriologic Examination.—Stained smears obtained from the foul smelling fluid showed the presence of a large number of various types of bacteria; morphologically there were many streptococci, staphylococci, many gram-negative bacilli and many gram-positive bacilli. Because of the morphology and the foul smelling character of the material, gas bacilli were thought to be present. Some of the material was injected intraperitoneally into a guinea pig. The guinea pig was then killed and placed in an incubator. Within twelve hours the guinea pig was considerably distended from the formation of gas.

Diagnosis.—The anatomic diagnosis was trauma on the chin and interstitial hemorrhage in both infra-orbital regions of the face, congestion and edema of the brain, healed tuberculosis, bronchiectasis, unresolved pneumonia with abscess formation, acute pneumonia with abscess formation and gangrene of the lung, degeneration of the heart, liver and spleen, and nephrosis.

CONCLUSION

An analysis and summary of all the observations in this case led us to the conclusion that the patient had a chronic lung abscess and bronchiectasis of the right lower lobe. The extreme weakness following the loss of blood and coma contributed to decrease the patient's resistance. The trauma was a factor in activating the old lung abscess. Also no doubt the patient aspirated large quantities of infected blood from the mouth.

All these conditions contributed an ideal culture medium for the growth of all the bacteria, particularly the gas bacillus, which produced the extensive gangrene of the right lung and generalized pneumonia.

700 Medical Arts Building.

PARATYPHOID SEPTICEMIA IN MAN DUE TO SALMONELLA SUIPESTIFER

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So far as is known, no case of septicemia due to Salmonella suipestifer has been reported previously in Tennessee. In 1927 Stewart and Litterer [1] reported a milk-borne epidemic of gastro-enteritis at Dyersburg, Tenn., caused by this organism. It would appear that "food poisoning" cases of S. suipestifer are more frequent than other manifestations due to this organism. However, during the past few years several cases of continued fever caused by this organism have been reported in the United States. In 1932, Kuttner and Zepp [2] of the Johns Hopkins Hospital reported a series of 7 cases of S. suipestifer septicemia in children at Baltimore varying in age from 7 months to 6 years. Again in 1933 these authors [3] described 4 similar cases in persons from 5 weeks to 28 years of age, one of whom died. Several authors in this country and abroad have reported isolated cases of S. suipestifer infections, some of them fatal.

S. suipestifer, or paratyphoid C organisms, were isolated from hogs by Salmon and Smith in 1885 [4] and afterward designated Salmonella cholerae suis. Hirschfeld first observed the typhoid-like infections due to this bacillus in the Serbian army; later, isolated cases were discovered in other parts of eastern Europe, India, Africa and the United States. In no case has any direct connection between hogs and the infection in man been shown.

REPORT OF CASE [5]

History.—G. L., a white man aged 66, a cotton mill superintendent, had lived in Elizabethton most of his life. He was 5 feet 11 inches (180.3 cm.) tall and weighed 215 pounds (97 Kg.). For the past thirty years or longer he had complained of a "missed beat" in his pulse. About ten years before admission he allegedly had chills and fever for five or six weeks and his illness was diagnosed as influenza. For several years he had complained of his right shoulder becoming cold. During the fall of 1938 he began to complain of fatigue and dyspnea, which appeared to become progressively worse for several months. Throughout the winter months he complained of "rheumatism" in his right shoulder and arm. During the week of April 23, 1939, symptoms of general malaise were noticed. On Sunday morning, April 20, while at church, he experienced chilly sensations which lasted about two hours. In the afternoon he consulted a physician relative to his condition. His temperature at this time was 102 F. At 8 p. m. while walking in the house he fell, became temporarily unconscious and vomited. About two hours later, after an apparently normal sleep, he awoke suddenly and had a severe chill followed by vomiting and profuse sweating. His physician found his axillary temperature to be 105.2 F. during the chill. The following day the patient appeared much better, and his temperature was normal. However, the next day there was another severe chill, with the axillary temperature reaching 106 F. Chills continued at irregular intervals but were less severe in character until May 17, when an unusually severe one occurred and the patient became cyanotic. During the next week his temperature ranged from normal to 102 F., with two or three mild chills occurring. On May 26 the patient died of respiratory failure.

During the twenty-seven days of illness the patient had about twenty chills, all of which were followed by vomiting and profuse sweating. The only pain noted was headache on April 30 and an occasional pain extending from the right side of the throat to the right side of the chest. Dyspnea was severe during the last week, with the respiratory rate about 40 per minute. The patient's pulse rate ranged from 90 to 110 a minute. Diarrhea was not observed at any time. Complete loss of appetite prompted the forcing of fluids. Loss of weight was noticeable after the first week. Occasional fleeting, fine, crepitant rales were detected over the bases of the lungs posteriorly, which aroused suspicion of pneumonia. Roentgen examination on May 15 showed the lungs to be normal. A slight irregularity of cardiac action was found during the last week. No enlargement of the liver or spleen could be detected, but obesity prevented accurate palpation.

Treatment consisted mainly of irregular administration of sulfapyridine and sulfanilamide. During the last week three blood transfusions and several intravenous injections of dextrose were given.

Laboratory Examination.—At the onset, urinalysis revealed the presence of numerous leukocytes and an albumin content of 1 plus. During the second and third weeks of illness the urine was essentially normal, but during the last week albumin was present to the extent of 2 plus. Culture of a voided specimen of urine on May 19 yielded nonhemolytic streptococci; examination was negative for the typhoid bacillus and related organisms. Examination of feces on the same day gave negative results. White blood cell counts varied from 13,000 to 18,000 per cubic millimeter, with polymorphonuclear cells averaging about 84 per cent. Diligent search on numerous occasions failed to reveal the presence of malarial parasites in the blood.

Beginning on May 7, blood was sent several times to the branch laboratory of the Tennessee Department of Public Health at Johnson City for agglutination. Blood cultures for the typhoid-paratyphoid group were taken on May 19. On all occasions agglutination was negative for typhoid, paratyphoid A, undulant fever, tularemia, typhus fever and Rocky Mountain spotted fever. The patient's blood serum agglutinated a standard paratyphoid B antigen in dilutions ranging from 1:160 on May 7 to 1:640 on May 19. The organisms isolated from the culture of the patient's blood taken on May 19 were agglutinated by paratyphoid B serum in a dilution of 1:160. Blood serum from the patient completely agglutinated the bacillus obtained from culture of the patient's blood in dilutions up to 1:2,560.

The organism isolated from the culture of the patient's blood belonged morphologically and culturally to the typhoid-paratyphoid subgroup of bacteria. The fermentation reactions were characteristic of paratyphoid B with the exception of a negative reaction with Simmons' citrate agar. This discrepancy, in addition to the fact that the organisms were agglutinated by the paratyphoid B antiserum in a dilution no higher than 1:160 while they were agglutinated by the patient's own serum in dilutions up to 1:2,560, led the laboratory technician to suspect a closely allied strain of bacteria, probably paratyphoid C. Thereupon a transfer of organisms isolated from cultures of the patient's blood was sent to the National Institute of Health for complete identification. The following report was received:

"The culture of the organism . . . appears to belong to the S. cholerae suis (Bacillus suipestifer) group. It produces acid and gas in dextrose, rhamnose, sorbitol and xylose broth but fails to attack lactose, sucrose, salicin, raffinose, arabinose or trehalose in an incubation period of fourteen days. Milk becomes first acid and then alkaline. Gelatin has not been liquefied in twelve days. . . . The strain is agglutinated strongly by an antiparatyphoid C serum, which indicates that it falls within the S. cholerae suis group serologically as well as culturally."

Epidemiology.—No indication of the source of infection could be determined. No reported case of fever of unknown origin or of food poisoning in the county preceded this case. Mr. L. and his wife had lived alone for several years, Mrs. L. doing all the housework including cooking. Mrs. L. stated that she had never had any typhoid-like illness or symptoms of food poisoning. Mr. L. ate all his meals at home and had not been

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From the Tennessee Department of Public Health.

1. Stewart, H. C., and Litterer, William: Outbreak of Gastro-Enteritis: Milk-Borne Epidemic at Dyersburg, Tenn., Caused by Salmonella Suipestifer, J. A. M. A. **89:** 1584 (Nov. 5) 1927.
2. Kuttner, A. G., and Zepp, H. D.: Paratyphoid-like Fever in Children Due to the Salmonella Suipestifer Group, Bull. Johns Hopkins Hosp. **51:** 373 (Dec.) 1932.
3. Kuttner, A. G., and Zepp, H. D.: Salmonella Suipestifer Infections in Man, J. A. M. A. **101:** 269 (July 22) 1933.
4. Havens, L. C.: The Bacteriology of Typhoid, Salmonella, and Dysentery Infections and Carrier States, New York, Commonwealth Fund, Division of Publications, 1935.
5. Dr. W. G. Frost, of Elizabethton, Tenn., the attending physician in the case, provided the history of the patient, and Miss Margaret Morrison, director of the Johnson City Branch State Laboratory, worked on the identification of the organism.

outside of Carter County during the past six months. The only food consumed by the patient not prepared at home was an occasional barbecue sandwich brought to him from a stand in Johnson City. He drank little milk, and it was obtained from a local dairy distributing raw milk. The house occupied by the patient is on the municipal water and sewage disposal system. He was visited frequently by his grown children, none of whom gave a history of a suspicious illness in the past. There were no pets or other animals associated with the household. No employees of the cotton mill of which Mr. L. was superintendent had experienced any recent typhoid-like illness.

COMMENT

In the case of paratyphoid septicemia due to S. suipestifer here reported the high agglutination titer of the patient's serum against the organisms isolated from the patient through blood cultures suggests that the organism identified was the etiologic agent rather than a terminal or accidental invader, with no suggestion as to the epidemiology. The possibility of a rodent-borne infection cannot be dismissed. This condition is rare, judging from reports in the literature. It may be that if thorough laboratory work was done in all cases of prolonged fever and of gastroenteritis the distribution of S. suipestifer in man would be found more widespread.

Special Articles

THE FEDERAL FOOD, DRUG AND COSMETIC ACT

AS IT APPLIES TO DRUGS DISPENSED BY PHYSICIANS OR ON PHYSICIANS' PRESCRIPTIONS

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The new Federal Food, Drug and Cosmetic Act, which became fully effective on July 1, 1940, is an expression of the authority conferred on Congress in the interstate commerce clause of the Constitution. All drugs that move in interstate commerce, including exports and imports, or are manufactured or sold in the District of Columbia or any of the territories, are within the jurisdiction of the act and are subject to its provisions. In many instances drugs dispensed by physicians or on a physician's direction are within the scope of the law. Even though the actual prescription of a drug may be a purely local transaction, the drug prescribed is subject to the federal law when it moves across a state line or is held for sale after such movement or is sold in the District of Columbia or a territory. However, Congress has provided certain exemptions for drugs in this class, both by direct legislative action and by the regulation making authority delegated to the administrator of the law. For a complete statement of the provisions of the law, the reader is referred to the text of the act and regulations issued to date. A copy of these may be obtained on application to the Food and Drug Administration. Likewise, a discussion of features of the act that are of particular interest to the medical profession is contained in an article which appeared in THE JOURNAL on Dec. 16, 1939.[1]

From the numerous inquiries that have been received, it is evident that the application of the law to drugs dispensed on a physician's prescription or by a physician himself is not understood by all concerned. It seems desirable, therefore, to present a summary of those provisions of the law which must be met even after full advantage is taken of the exemptions provided by the act and its regulations. The summary to be given applies only when a drug is dispensed by or on the written prescription of a physician, dentist or veterinarian who is licensed by law to prescribe the drug in question. It does not apply to a drug dispensed in the course of the conduct of a business of dispensing drugs pursuant to diagnosis by mail. In this case all the provisions of the act without exception or exemption are applicable. Likewise, all the provisions of the act pertain when the labeling of a drug bears such information as will result in the repurchase and continued use of the drug by lay users without the direction and supervision of the physician who prescribed it or any other physician. Obviously it was the intent of Congress that substantial exemptions from the full labeling requirements of the act should be extended only to drugs which are bona fide prescription items and which are, in fact, available only on the direction of a physician. It is evident, therefore, that labeling or other printed matter which operates to circumvent this purpose shall, by the same token, serve to negate the fundamental condition on which the exemptions are granted.

Having taken full advantage of the exemptions, the following provisions still apply to drugs dispensed by physicians or on physicians' prescriptions:

1. A new drug, as defined in the act, may not be dispensed even on the prescription of a physician unless a new drug application filed with the Administrator of the Federal Security Agency has become effective. This does not mean that a qualified expert may not administer a new drug for investigational purposes after compliance with the regulations of section 505 (i) of the law.

2. The labeling of the drug shall not be false or misleading in any particular [section 502 (a)].

3. The label of the drug dispensed on the written order of a physician shall bear [section 503 (b)]:

(*a*) The name and place of business of the dispenser.

(*b*) A serial number identifying the drug dispensed and connecting it with the physician's prescription kept on file by the dispenser or the dispenser's record of the transaction or both.

(*c*) The date of the prescription.

(*d*) The name of the physician, dentist or veterinarian who wrote the prescription.

4. Where the physician's prescription is marked as "not refillable" or refilling is prohibited by state or local law, the labeling of the drug dispensed need not bear a statement of the name and quantity or proportion of alpha eucaine, barbituric acid, beta eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, heroin, marihuana, morphine, opium, paraldehyde, peyote or sulfonmethane, or any chemical derivative found to be and by regulation designated as habit forming, nor the statement "Warning—May be habit forming." For the present, it is our interpretation that the physician may direct in writing that such a prescription be filled more than once, provided the number of times is precisely stated and it is also clearly marked in writing as not refillable beyond the number of times so stated. The regulations designating

1. Klumpp, Theodore G.: The New Federal Food, Drug and Cosmetic Act—A Consideration of Features That Are of Particular Interest to the Medical Profession, J. A. M. A. **113**: 2233-2235 (Dec. 16) 1939.

habit-forming derivatives of the substances mentioned are expected to be promulgated shortly. After they are issued, physicians may obtain a list of them by application to the Food and Drug Administration.

5. Regulations under section 502 (f) (1) exempt drugs dispensed by or on the prescriptions of physicians from the necessity of carrying directions for use, under specified conditions, since it may be assumed that the physician prescribing the drug will convey to his patient in detail the specific individually indicated directions for use. Applications for potent new drugs intended to be sold on physicians' prescriptions will not be permitted to become effective when the labeling bears any directions whatever that may serve to encourage unsupervised use.

6. Section 502 (f) (2) provides that the labeling of drugs in general shall bear such adequate warnings against use in pathologic conditions or by children when its use may be dangerous to health, or against unsafe dosage or methods or duration of administration or application, in such manner and form, as are necessary for the protection of users. Here again it may be assumed that the physician will provide his patient with warnings which will be more specific and comprehensive than anything which can be given in a general way on the labeling of drugs. Where such warnings are given and are adequate to protect the user, the purpose of the act will presumably be accomplished in most instances without resort to a statement on the labeling which would be superfluous and repetitious. However, the statute itself provides no exemption from the requirement that adequate warnings appear in the labeling.

As indicated previously, if a drug is dispensed in such form and manner and under such labeling as will enable the user to repurchase the article and continue to use it indefinitely and perhaps recommend it to friends, obviously under such circumstances only such warnings on the labeling will be adequate which will in themselves fully protect the user.

7. The law provides that official drugs shall be packaged and labeled as prescribed in the official compendiums, and in the case of unofficial drugs the administrator is authorized to prescribe by regulations such packaging and such label statements as are necessary for the protection of the public health. These regulations have not yet been issued. For the present, it may be presumed that where such packaging and labeling requirements are essential for the protection of the public health they will apply to drugs dispensed on the written prescription of a physician.

8. A drug coming under the jurisdiction of the act may not be dispensed if it is dangerous to health when used in the dosage or with the frequency or duration prescribed, recommended or suggested in the labeling thereof. Ordinarily it may be assumed that a physician will not prescribe such a dangerous drug. However, instances may arise in which the medical profession as a whole condemns the use of a drug as dangerous and despite this consensus of condemnation an individual, oblivious to such danger, may wish to administer the drug. In such a case the safeguard of the law cannot be withheld. Its effect would be to close the channels of interstate commerce to the drug. An example of this is the drug dinitrophenol, which is not now available in interstate commerce. The same applies to the so-called elixir of sulfanilamide, in which the toxic element was the solvent diethylene glycol and not the sulfanilamide.

GLANDULAR PHYSIOLOGY AND THERAPY

OVARIAN DYSFUNCTIONS AND THEIR TREATMENT

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This special article is published under the auspices of the Council on Pharmacy and Chemistry. It is one of a series which will be published in book form as the second edition of "Glandular Physiology and Therapy." The opinions expressed in these articles are those of the authors and not the official views of the Council.—ED.

The ovaries have three essential functions: First, they produce ova, the germ cells. Second, they elaborate or metabolize estrogenic substances, which play a primary role in the development of the female secondary sex characters and in the maintenance of the accessory genital organs. Third, in them is formed corpus luteum, an ovarian structure which appears at cyclic intervals and produces a hormone, progesterone, which is indispensable for reproduction.

Ovarian dysfunctions must be regarded as manifestations of deficiency or hyperactivity of one or more of these phenomena, but with the present knowledge a classification in terms of clinical syndromes is impossible. For this reason it is best to discuss the subject not on the basis of ovarian pathologic conditions but indirectly from evidences of gonadal disturbance obtained from the study of disorders of menstruation. It must be granted that there are disadvantages in doing this, since one must deal with symptoms rather than with disease entities, but it is the method of approach used by an overwhelming majority of clinicians. The only exceptions which may be made are in cases of a few fairly well defined clinical entities, such as precocious development, complete absence of ovarian function and metropathia haemorrhagica.

OVARIAN DYSFUNCTION DURING THE PREPUBERAL AND PUBERAL PERIODS

The first sign of active ovarian function is the development of the secondary sex characters. The earliest evidence appears at about the age of 8 years, when the breasts begin to develop and estrogenic substances become demonstrable in the blood and urine. The most striking manifestation, however, is the onset of the first menstrual period, the menarche. In this country, the average age for this event is between 13½ and 14½ years, and in the majority of instances it occurs between the ages of 10 and 16 years. The appearance of menstruation before the age of 9 is therefore regarded as precocious maturation and after the age of 16 as "delayed onset of the menses" or "primary amenorrhea."

1. *Pubertas Praecox.*—In true precocious menarche all the events of the normal physiologic process are reproduced. The secondary sex characters develop, there is an enhanced rate of body growth and the menses appear and recur at cyclic intervals. Of especial significance is the fact that the menstrual cycles are complete, with ovulation and corpus luteum formation, so that the subjects are able to become pregnant at an early age. In this category belong instances of

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gestation in girls from 6 to 12 years of age. The exact etiology of such a disturbance is not known. It must be of endocrine origin, but the only demonstrable abnormality is the appearance of normal physiologic phenomena at an earlier age. Obviously, no therapy is indicated, but a careful investigation of all such patients must be made to make sure that they do not belong to the second subgroup of this division.

2. Pseudo Pubertas Praecox.—The majority of instances of so-called precocious menarche in the literature are not true "pubertas praecox" but represent a definite pathologic entity. In such cases the secondary sex characters develop, the pelvic organs enlarge and uterine bleeding occurs. These changes, however, merely represent an estrogenic effect. Ovulation does not take place, there is no formation of corpus luteum and pregnancy is not possible. Following suitable treatment, there is a regression of these changes and uterine bleeding ceases, but if at least one ovary is present they recur later as part of the physiologic menarche.

The cause is found in tumors which produce excessive amounts of estrogen, and, although attention has been directed to lesions of the anterior lobe of the hypophysis, thymus and pineal gland, the only clear instances have been associated with tumors of the ovaries. The treatment consists of surgical removal of the new growths, which have been described as granulosa cell tumors, sarcomas, teratomas and carcinomas.

3. Delayed Menarche and Primary Amenorrhea.—These terms are employed synonymously, or an arbitrary distinction is made between them, according to the age of the patient. In the latter case, delayed menarche is applied to girls between the ages of 16 and 18 years and primary amenorrhea to those beyond the eighteenth year. Both terms refer to a delay in the appearance of the first menstruation, which often is accompanied by various disturbances in other changes of the adolescent period. The secondary sex characters are often imperfectly developed or absent. The breasts remain small, and there is no hair, or only a scant amount, over the pubic and axillary regions. There may be but little deposition of fat over the hips, shoulders and thorax. Of importance is the fact that the deficiency of ovarian function leads to an imperfect development of the genital organs, especially noteworthy in the case of the uterus, which persists in an "infantile type." At times alterations in body growth are striking, and the most characteristic finding is that the patients are tall and thin, with long lower extremities and span in proportion to the length of the trunk.

Many causes have been suggested for primary amenorrhea, and attention must be directed particularly to hereditary and constitutional factors, systemic disease, environment and malnutrition. It is likewise probable that primary deficiencies of the endocrine glands, notably the anterior lobe of the hypophysis, the thyroid and the gonads, are frequently responsible.

The treatment of primary amenorrhea has proved very disappointing. In recent years estrogenic and gonadotropic substances have been widely employed in the manner described in the section dealing with secondary amenorrhea. In spite of many favorable reports, the most successful approach probably lies in the employment of suitable dietary and hygienic measures, and, whenever clinical signs and a basal metabolic test so indicate, the use of thyroid substance.

SECONDARY AMENORRHEA

Under the term secondary amenorrhea are included instances of cessation of menstruation in women who possess one or both ovaries and an endometrium capable of normal function. The period of amenorrhea may vary from a few weeks to several years. When it becomes permanent in younger women it may be considered as a "premature menopause."

In many cases the exact mechanism concerned with amenorrhea is not clear, but the focal point of the disturbance is always the ovaries, which fail to undergo a normal cycle. This may be due to some influence exerted on the gonads directly or indirectly through interference with the gonadotropic function of the anterior lobe of the hypophysis.

There are many causes of functional amenorrhea. The occurrence of normal menstruation is dependent on general good health, and failure to menstruate may be the first indication of a systemic disease. It may occur in almost any form of ill health and is found in many instances of malnutrition, intoxications and wasting diseases such as tuberculosis and diabetes mellitus. Although the reproductive organs are primarily under the control of the endocrine glands, the glands themselves are subject to the autonomic nervous system, and various emotional disturbances may lead to amenorrhea. It is well known that shock, fright, fear, worry, sexual disharmony, changes of work, climate or environment, surgical operations and certain mental diseases frequently cause a cessation of menstruation. On the other hand, the majority of amenorrheic patients suffer from a primary endocrine disturbance. A small number of these present a definite condition, such as deficiency of the anterior pituitary lobe due to tumor growth or constitutional defect, hyperthyroidism, adrenal new growth or ovarian deficiency. In many cases the exact ductless gland at fault is not discernible with certainty, as the amenorrhea is not associated with clearcut clinical manifestations; these cases present a very difficult diagnostic problem.

The treatment of secondary amenorrhea primarily demands the employment of general measures and the eradication of any organic lesion which may be responsible for it. It is a symptom which calls for extensive investigation, and attention must be directed to the existence of systemic disease, endocrine disorder, psychic disturbance, malnutrition or an unfavorable living or occupational environment. If such a factor is discovered, it necessarily follows that the cure is altogether dependent on the rectification of the condition at fault.

Among general measures, special attention must be given to personal hygiene. Proper and sufficient food is necessary, and it may be advisable to supplement the diet with vitamins and minerals. When amenorrhea exists with obesity an attempt must be made to reduce the patient's weight. A low basal metabolic rate requires the daily administration of suitable doses of thyroid substance. The patient also should take enough exercise in the open air, and at times an investigation of working hours and living conditions may give a clue to the correct therapeutic approach.

The specific treatment of amenorrhea must be directed toward a restoration of a complete ovario-uterine cyclic activity. Recent advances in knowledge of the mechanism of the menstrual cycle have shown conclusively the uselessness of emmenagogues and procedures which lead merely to an abnormal uterine hemorrhage.

The employment of low dosage irradiation of the ovaries has been championed by a number of authors both in Europe and in this country but has failed of wide clinical application owing to the individual variations in the narrow margin between safe and harmful dosages, and also because of the possibility of damage to the germ plasm which may manifest itself in later generations. Irradiation of the hypophysial area alone, in the hope of enhancing this gland's gonadotropic function, also has been advocated, but the results are not convincing.

The appearance of active biologic preparations of estrogenic substances was at once hailed as a possible cure for amenorrhea, and many favorable reports regarding their usage have been published. In some instances ridiculously small dosages have been employed, such as 100 to 500 international units taken by mouth. In others, a total of as much as 500,000 to 1,000,000 international units has been administered by intramuscular injections of from 10,000 to 50,000 international units two or three times a week. Many patients bleed cyclically during treatment or following each course of injections, but the infrequency of a permanent restoration of menstruation arouses a doubt as to the validity of many published reports. Some authors justify this therapy on the ground that it may result in the growth of an atrophic uterus (temporary?). It is important to remember that the use of estrogenic substances is purely substitutive therapy. Estrogens have no direct effect on the ovaries, and in the endometrium they merely stimulate growth and do not produce secretory changes, which is a function of the corpus luteum. Nevertheless, estrogens are widely used in the treatment of amenorrhea, and further judgment must remain *sub judice*.

The logical substance for the treatment of functional amenorrhea should be capable of stimulating the ovaries to normal function. For this reason attention is directed particularly to anterior pituitary or equine gonadotropins, but this method of approach is still in an experimental stage.

An international standard for equine gonadotropin has only recently been established, and there is none for hypophysial gonadotropin. Recent attempts with such substances have been inadequate, but attempts nevertheless are made by giving short courses of high doses of gonadotropin at intervals of a month. It is not possible to give any recommendations regarding dosage at the present time because of the lack of consistency in the available commercial preparations, but each manufacturer makes his suggestions for the use of his specific product.

Of importance is the fact that the employment of chorionic gonadotropin is not indicated. There is no evidence that this substance can lead to a normal development of graafian follicles in women. The only exception to this statement is that it may be used with the hypophysial follicle-stimulating principle with the object of enhancing the gonadotropic effect of the pituitary factor.

POLYMENORRHEA AND OLIGOMENORRHEA

The menstrual cycles of normal persons are subject to considerable variation in length, but at times there is such a marked shortening or lengthening of consecutive cycles that attention is directed to them as evidence of some disorder.

Polymenorrhea.—This condition is characterized by a shortening of the average length of the menstrual cycle. The usual course of events goes on both in ovaries and in endometrium, but the cycles last only from fourteen to twenty-five instead of the average thirty days. It is often stated that this abnormality is brought about by a hyperhormonal condition, that is by overactivity of the ovaries. This contention is open to question, and on the basis of Schroeder's studies it is more likely that it results from an ovarian deficiency which manifests itself by a premature disintegration of the corpus luteum, thus leading to a shortening of the postovulatory phase of the cycle.

Although it is the least common type of menstrual irregularity and is found in women who are normal in all other ways, polymenorrhea is an important symptom pointing to a pathologic condition. It is found frequently in the preclimacterium or in ovarian deficiencies associated with hypothyroidism, and it may have a psychogenic origin and result from fear of pregnancy or infection or from one of various sex perversions. Most often it accompanies organic pelvic disease, especially pelvic inflammation, fibromyoma uteri or uterine retrodisplacement. In such cases the shortened cycles must be attributed to vascular disturbances which directly affect the ovaries.

In most instances polymenorrhea does not call for specific therapy, as it results from some systemic or pelvic disorder. Whenever there are no apparent local or general causes, treatment is very discouraging. The endocrine factors concerned are not clearly understood, and hormonal therapy has not proved effective. It is said that cycles may be prolonged by administering large doses of estrogens, such as from 50,000 to 100,000 international units, during the early part of the cycle, but this effect is not permanent.

Since menorrhagia frequently accompanies polymenorrhea, treatment should be directed primarily to this complication. Of importance also is the establishment of a correct diagnosis, since the occurrence of too frequent menses may be confused with the hemorrhage of metropathia haemorrhagica and midinterval (ovulation) bleeding.

Oligomenorrhea.—This condition is a prolongation of the menstrual cycle beyond average limits. It is closely related to amenorrhea, and it is difficult to differentiate between the two. A woman who menstruates at intervals of three or four months may be regarded as having either oligomenorrhea or recurring periods of amenorrhea.

Treatment of oligomenorrhea is not always justified, since this symptom may be compatible with normal good health. In certain instances, for example when it is associated with sterility, it may be desirable to institute therapy, and in this case the problem should be approached exactly along the lines given for secondary amenorrhea.

HYPOMENORRHEA AND HYPERMENORRHEA

Although there is a marked variation in the length of successive menstrual cycles in women, there is a much greater constancy in the duration of the menses and the amount of loss of blood in each case. For this reason, any increase or decrease in the amount of blood lost during menstruation is of importance as indicative of a pathologic condition, but the exact role of the ovaries in such disturbances is not definitely understood.

Hypomenorrhea.—This term refers to a diminution of the amount of flow or a lessening of the duration of the menses. It is not a very frequent finding in cycles of average length. The cause, or causes, are difficult to determine, but generally it is attributed to

endocrine disorders which lead to a functional ovarian deficiency. At times, also, it occurs from an endometrial deficiency, such as follows a subtotal hysterectomy with a resultant diminution of the total area of the uterine mucosa, or a partial destruction of the endometrium by injudicious curettage, chemical treatments or extensive infections.

This symptom often accompanies oligomenorrhea, and the most important indication for treatment is its occurrence in association with sterility. Endocrine therapy is directed, as in amenorrhea, toward either (1) stimulating the endometrium with estrogenic substances or (2) attempting to influence the ovaries with gonadotropic preparations. In either case the results have not been promising.

Hypermenorrhea, or Menorrhagia.—These terms are applied to the occurrence of a succession of unduly profuse or prolonged menstrual periods following complete ovulatory cycles. A flow of more than seven days' duration should be considered abnormal. Menorrhagia may be found with cycles of average length and is a frequent accompaniment of polymenorrhea. It is an important complication, as it may bring about serious consequences, even to the point of endangering the life of the patient.

It is probable that endocrine disorders may be etiologic factors, but it is difficult to determine the exact mechanism by which profuse menses are produced. Theoretically, an excessive activity of normal ovarian function resulting in overgrowth of the endometrium prior to menstruation may result in excessive bleeding. This state of affairs is seen in some instances of hypothyroidism. As a matter of fact, menorrhagia in the vast majority of instances is observed in women with an organic pelvic disease, for example, chronic salpingitis, fibromyoma uteri, adenomyoma, subinvolution of the uterus, endometritis or a systemic condition, such as one of the various blood dyscrasias.

In all such cases, the treatment must depend on first combating the effect of the recurring hemorrhages by blood transfusions, the administration of liver extract and iron and a suitable dietary regimen. Whenever a systemic or local disturbance is noted it must be met with suitable therapeutic measures. In the total absence of apparent causative factors, local or general, various endocrine preparations may be employed, but the results are not as hopeful as they are in metropathia haemorrhagica. The use of the chorionic gonadotropin or of progesterone (as for metropathia haemorrhagica) has been widely advocated, but the results are favorable only in a limited number of instances. In many cases thyroid substance has proved of value, even in women with normal basal metabolic rates. Many other procedures have been advocated, with varying degrees of success, such as administration of solution of parathyroid, of moccasin snake venom or of insulin and irradiation of the spleen. Irradiation with roentgen rays or radium finds its greatest value in the treatment of women nearing the menopausal age, and for younger women the final resort is hysterectomy. In young or old, the possible existence of a carcinoma demands careful diagnostic precision, but a malignant condition of the uterus is not often found in instances of regular cyclic uterine hemorrhage.

ANOVULATORY MENSTRUATION

At certain times "menstruation" occurs without preceding ovulation, corpus luteum formation and secretory changes in the endometrium. It should be regarded as a type of ovarian deficiency, since it results from failure of ovulation to take place. Clinically, the patient has periods of bleeding indistinguishable from ovulatory menstruation, so that the diagnosis must be made from an examination of the endometrium.

The frequency and clinical significance of anovulatory menstruation in women are not determined, but they are possibly factors in some cases of sterility. If treatment seems desirable, the logical approach is to stimulate follicle growth with either anterior pituitary or equine gonadotropin. The gonadotropin should be given early in the cycle, a few days after the cessation of the menses.

METROPATHIA HAEMORRHAGICA

The term metropathia haemorrhagica is applied by Schroeder to a definite endocrine entity characterized by specific changes in the ovaries and endometrium and clinically of importance because it leads to profuse uterine bleeding.

The disease is found at all ages but is especially prone to occur shortly after the menarche and in the preclimacterium. The uterine hemorrhage may manifest itself in several ways. It may be periodic in occurrence and hence simulate menorrhagia. Frequently the bleeding occurs irregularly, or it may become continuous, appearing daily for weeks or months. In a considerable number of instances it sets in after a period of amenorrhea, in which case it may be confused with threatened or incomplete abortion.

In metropathia haemorrhagica the ovaries may be slightly enlarged and contain from a few to many cysts representing various stages of follicular atresia, the most characteristic feature being an absence of corpora lutea. There is thus a failure of ovulation in these patients, so that the endometrium is constantly stimulated by estrogens in the absence of the progesterone influence. The same result is obtained in the presence of granulosa cell tumor of the ovary.

The uterine mucosa reflects this abnormal stimulation from the ovary. It is usually thickened and edematous, and the surface has irregular prominences. Histologically, the normal cyclic changes are lacking, and it presents the abnormal development known as "hyperplasia of the endometrium."

The treatment of metropathia haemorrhagica consists in the first place of treating the resultant anemia with suitable means, such as the administration of iron and liver extract and the use of blood transfusions. Of the specific procedures to control the bleeding, five of them call for especial consideration: 1. Chorionic gonadotropin may be given in large daily doses, such as from 500 to 1,000 international units, intramuscularly for from six to ten days, beginning with the onset of bleeding. The Council on Pharmacy and Chemistry of the American Medical Association recently held that the efficacy of this therapy is not clearly established, but many observers have reported favorable immediate results in as many as 75 per cent of their cases. It is most effective in younger persons, but, although it may control the bleeding, recurrences are experienced at varying intervals. 2. Injections of progesterone also may be employed, from 1 to 3 international units being given daily until the bleeding is controlled. This substance often controls the bleeding in a dosage insufficient to stimulate definite secretory changes in the endometrium. Since this substance has no direct effect on the ovaries, it is not curative. 3. Although it must be regarded as an experimental procedure, the use of

testosterone propionate is worthy of consideration and has given some encouraging results. It may be given by intramuscular injection in amounts of 25 mg. in oil twice weekly until a total of 250 to 400 mg. has been administered. There is some danger of inducing masculinizing effects when higher doses are employed. 4. The operation of curettage is at times resorted to as an adjunct to endocrine therapy when there is a marked proliferation of the mucosa and polyp formation. It is also a valuable diagnostic procedure to eliminate the possibility of a coexistent carcinoma. 5. Roentgen and radium irradiation are indicated for patients in the climacteric because they do not respond readily to endocrine therapy. Radium is preferable, since a diagnostic curettage can be done at the time of its application. From 1,200 to 1,500 milligram hours in the uterine cavity has been found suitable. 6. Hysterectomy is the last resort in cases of uncontrollable metropathia haemorrhagica in young women, in which it is desired to avoid the castration produced by irradiation.

TOTAL ABSENCE OF OVARIAN FUNCTION

A complete loss of ovarian function follows surgical removal or destruction by irradiation of both gonads and is a sequence of the physiologic menopause. There are many individual variations in the reaction to ovarian deprivation, and in some instances it produces numerous local and systemic disturbances.

The lack of ovarian stimulation immediately results in cessation of menstruation and in atrophy of the accessory genital organs. The breasts likewise undergo involution, and with the removal of the inhibitory influence of the ovaries there is an overproduction of the anterior pituitary gonadotropin, which appears in great amounts in the blood and urine. Estrogenic hormones are still demonstrable in the blood and urine after castration or the menopause, a fact which speaks for an extragonadal origin for these substances.

In most cases the loss of the ovaries produces few or no symptoms requiring therapy, but at times a long train of disturbing elements enter into the picture. The most frequent subjective symptom is "hot flushes," a result of vasomotor instability. Their incidence is usually placed at between 60 and 90 per cent of all cases. There also may be tachycardia, palpitation, dyspnea, choking sensations, insomnia and headaches. A certain number of women at the climacteric have an increase of blood pressure, but many authors attribute this condition to cardiovascular or renal disease, which is especially prevalent in this age group. At times, various psychoses may develop in unstable persons. The libido may undergo no change, although usually it is diminished. Hirsutism is occasionally found, and obesity frequently results.

The first step in the treatment of a patient with symptoms resulting from castration or the menopause is to direct attention to her general health. She should be encouraged to take plenty of exercise, preferably outdoors, and sufficient restful sleep. Hot baths or cold showers may be employed to advantage. A full life with vital interests, diversions and recreation should be encouraged. A suitable vacation or change of climate is often of great benefit. A correct diet is essential, and in the presence of obesity it should be controlled. Of importance is the patient's mental attitude, and the number and the intensity of the nervous and psychic manifestations of the climacteric may be greatly influenced by a helpful talk with a sympathetic physician. Women with intense psychic manifestations may require psychiatric supervision. In many cases mild sedatives, such as bromides or phenobarbital, are of distinct value in controlling nervousness, insomnia and vasomotor symptoms.

The specific measures employed in the treatment of symptoms of the climacteric aim at a direct control of endocrine changes, and the most important is the administration of estrogenic substances. They have been instrumental in bringing relief to a high percentage of patients with vasomotor and nervous symptoms. Many authors advocate the continued employment of small doses, such as from 50 to 200 international units orally two or three times a day, increasing gradually until relief is obtained.[1] In cases of severe symptoms it is better to give short concentrated courses of estrogens by intramuscular injection. For instance, from 5,000 to 50,000 international units in oil may be given every three or four days for periods varying from two to five weeks. By this means relief is readily obtained, but it may be necessary to repeat such courses of treatment at intervals of a few months.

Estrogenic substance performs another valuable service in the treatment of symptoms resulting from atrophy of the accessory genital organs, especially "senile vaginitis." In such cases, the substance is used in the form of vaginal suppositories containing 2,000 international units which can be inserted each evening by the patient herself.

Recently a number of authors have demonstrated that administration of the androgen testosterone is also effective in controlling postcastration and postmenopausal symptoms. This method has as yet been insufficiently studied, and two objections are apparent: First, the available preparations are very expensive and, second, overdosage may lead to undesirable masculinizing effects, such as facial hirsutism, enlargement of the clitoris and a change of the voice.

PREMENSTRUAL TENSION

During the premenstruum many women experience nervousness, irritability, tendency to cry, malaise, cold sensations, nausea or abdominal distention. In some instances these symptoms are markedly accentuated and cause patients to seek relief. Although psychic factors often are in the background, many authors believe that the symptoms result from an endocrine disturbance. Frank gave to this state the appropriate name of "premenstrual tension," and the term is now generally used in medical literature. Although no conclusive evidence in support of this concept had been advanced, he attributed the condition to an excess of estrogen in the blood and advocated the employment of magnesium sulfate in order to eliminate the hormone as speedily as possible.

The wide variety of therapeutic agents advocated for this distressing condition is a warning against premature explanation of its causation. If excess of estrogen is the cause, the administration of estrogenic substances should intensify the symptoms. This is often the case, but at times such a method of treatment brings relief. Some investigators administer progesterone, others testosterone, by intramuscular injection. Of especial interest is the suggestion made recently that premenstrual tension results from the generalized edema which is so often an accompaniment of this stage of the menstrual cycle. In order to offset this effect, it has been suggested that patients be placed on

1. Some authorities favor giving a preliminary course of intramuscular injections. When relief is obtained, the estrogen is administered orally, and the daily dose is diminished until a "maintenance level" is determined.

a salt-free diet and take 0.6 Gm. of ammonium chloride three times daily for two weeks before an expected period.

INTRINSIC DYSMENORRHEA

Pelvic pain occurring just before or at the time of menstruation in the absence of gross lesions has been termed intrinsic, primary, idiopathic, essential or functional dysmenorrhea. It is frequently complained of, but the exact incidence is not known, owing to the difficulty of interpreting the subjective symptom "pain" in different persons. There are many conflicting reports on the subject.

Intrinsic dysmenorrhea is essentially a disease of the third decade, but it may persist throughout menstrual life. It may have its inception at the menarche or after a few years of painless menstrual periods. The most common type of pain is sharp, cramping and intermittent, and is referred to the midline in the lower part of the abdomen, extending at times to the back or thighs. It is often accompanied by headache, backache, general pain, nervousness, irritability, nausea, vomiting, joint pains or gastrointestinal disorders. The time at which the pain begins varies considerably. It may start a few hours before the onset and continue during menstruation, or it may be present in the premenstruum and cease when the menses appear. In still other instances the patient suffers only during the flow. The duration is from a few hours to several days.

This subject is treated in this chapter in order to complete the general discussions included in the book "Glandular Physiology and Therapy," but this must not be interpreted as an admission that intrinsic dysmenorrhea has been proved to be ovarian dysfunction. The immediate factor producing dysmenorrhea is held to be a disordered or spasmodic contractility of the uterine musculature, but the basic cause is unknown, although many theories have been advanced. For instance, it has been suggested that intrinsic dysmenorrhea is the result of a congenital obstruction of the cervical canal, of purely psychogenic factors, of hypoplasia of the uterus, of overactivity of the abdominopelvic sympathetic nerve, of painful separation of a decidual cast or of constriction of the uterine arteries. There is likewise no lack of speculation regarding the role of the endocrine glands. It has been said that dysmenorrhea is caused by a deficiency of estrogens, an excess of estrogens, a lack of progesterone, an excess of progesterone, thyrotoxicosis, hypoglycemia and calcium deficiency.

In keeping with the vast array of theories advanced for the cause of dysmenorrhea are the countless therapeutic measures which have been recommended. It is impossible to record them all in this brief review, but mention may be made of some specific endocrine measures at present under investigation. In each instance favorable results have been reported, but the whole problem must be regarded as still in an experimental stage.

1. Estrogenic hormones are used in the belief that they may serve to overcome uterine hypoplasia and degenerative changes in the cervical ganglions and to produce dilatation of the endometrial blood vessels. Several methods of administration have been described. These substances have been given by mouth in daily doses of 100 to 500 units during the whole menstrual cycle. Some authors give intramuscular injections of 10,000 to 50,000 international units during the premenstruum. Still other investigators recommend the injection of 5,000 to 15,000 international units every three to four days over a period of three months, but such high dosages may disturb the cycle, lengthening it from one to three weeks.

2. The trial of progesterone is warranted because it has an inhibitory effect on the contractility of the uterine muscle. The minimal effective dose has not been ascertained, but ¼ to one or even more international units may be given intramuscularly two or three times a day, beginning a few days before an expected menstrual period. The advent of an orally effective progestin-like substance, pregneninolone, also presents possibilities, but no reports of well controlled studies are available.

3. Of especial interest have been the recent reports on the employment of testosterone propionate. This substance is given by intramuscular injection in doses of 10 or 25 mg. twice or three times a week over a period of one to two months. One wise recommendation limits the total dosage to 200 mg. given during one menstrual cycle and 150 mg. during the second.

4. The employment of chorionic gonadotropin was in vogue for a short time, but it is probably of no value beyond psychotherapeutic effects.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

OFFICE OF THE SECRETARY.

ADRENAL CORTEX EXTRACT

The cortex of the adrenal gland is essential for life. Adrenalectomized animals die in a few days. During the acute stages of adrenal insufficiency, occurring in disease or as the result of experimental procedures in animals, conditions commonly observed include blood concentration, low blood pressure, gastrointestinal disturbances, asthenia, subnormal temperature and low basal metabolic rate. There also may be found loss of sodium and retention of potassium in most species, loss of carbohydrate reserves with hypoglycemia and retention of nitrogenous products in the blood. Injections of suitable extracts of adrenal cortex which contain little or no epinephrine restore even moribund animals to apparently vigorous health for as long as the injections are continued.

Extracts of the adrenal cortex contain several potent substances which influence to a variable degree electrolyte, water or carbohydrate metabolism; however, no one of these substances and no synthetic substance has yet been shown to possess all of the effects of a potent cortical extract.

Crystalline compounds have been isolated from the cortex which are capable of maintaining the life of adrenalectomized animals and restoring toward normal the metabolic conditions induced by adrenal insufficiency. These compounds are steroids, and the most potent of them are corticosterone and dihydrocorticosterone. Many other steroids have been isolated from this tissue, but most of these have little known physiologic activity.

The chemical structure of the cortical steroids is closely related to that of the sex hormones; in fact, some of the cortical steroids have estrogenic or androgenic properties and, in certain abnormal conditions of the cortex, large amounts of estrogens or androgens may be recovered in the urine. On the other hand, the sex hormone progesterone has life maintaining properties in adrenal insufficiency, while other sex hormones such as estrone and testosterone are capable of inducing electrolyte changes similar to those produced by cortical steroids.

Adrenal cortex extracts have been assayed in many ways. There are advantages to each of the various methods, but it appears that the maintenance of life in the adrenalectomized animal is the most significant measure of activity for such extracts. For purposes of N. N. R. description, the Council has recognized the assay method devised by Pfiffner, Swingle and Vars (*J. Biol. Chem.* **104**:701, 1934) or the slight modification used by Cartland and Kuizenga (*Am. J. Physiol.* **117**:678,

1936). By these methods the activity of adrenal cortex preparations is expressed in terms of dog units for uniformity of labeled potency. An alternate assay method using adrenalectomized rats according to the procedure of Cartland and Kuizenga (*Am. J. Physiol.* **117**:678, 1936) may also be employed and the results transposed in terms of dog units, provided sufficient data are presented that such a comparison of assays is justified. No preparation of adrenal cortex extract will be accepted for inclusion in New and Nonofficial Remedies that does not have a minimum of 40 Gm. of gland concentrated in 1 cc. of extract.

Desoxycorticosterone, one of the components of adrenal cortex but which is prepared synthetically, is capable of maintaining life in adrenalectomized animals. Desoxycorticosterone differs from extracts of the adrenal cortex in being relatively inactive by mouth and in being chiefly concerned with salt and water metabolism. The adrenal cortex has other activities such as a role in the regulation of carbohydrate, fat and protein metabolism. Therapy with desoxycorticosterone is promising but, as yet, only on an experimental basis. The status of this therapy, including the possibility of harmful reactions and contraindications, is discussed in a Council report (J. A. M. A. **114**:2549, 1940).

ADRENAL CORTEX EXTRACT (UPJOHN).—An extract of adrenal glands, from domesticated animals used as food in man, containing the cortical steroids essential for the maintenance of life in adrenalectomized animals. Only traces of epinephrine are present.

Actions and Uses.—Although the extract is active by mouth, this method of administration for therapeutic purposes is not practical; the usual methods of administration are subcutaneous, intramuscular or intravenous injection. The extract is of value in the treatment of Addison's disease or of adrenal insufficiency of other types, and in surgical procedures involving the adrenal cortex when prophylactic measures are needed to prevent the development of temporary adrenal insufficiency. There is as yet no conclusive proof of the value of the extract in the so-called borderline cases of adrenal insufficiency.

Dosage.—The amount required for therapeutic purposes varies widely according to the degree of cortical insufficiency, the condition of the patient, the presence of infection or other complications, and during a crisis. The clinical response of the patient should govern the dosage. As much as 2,500 to 5,000 dog units within a few hours may be required for a patient in a severe crisis, while from 100 to 500 dog units daily may be sufficient substitution in many cases of Addison's disease. Large amounts of sodium chloride or other sodium salts, as well as a diet which is low in potassium, are of definite value in supplementing adrenal cortex extracts.

Manufactured by The Upjohn Company, Kalamazoo, Mich. U. S. patent 2,053,549 (Sept. 8, 1936; expires 1953); and 2,096,342 (Oct. 19, 1937; expires 1954). No. U. S. trademark.

Sterile Solution Adrenal Cortex Extract, 10 cc. vials: Each cubic centimeter contains not more than 3 mg. of gland extractives and has a potency equivalent to 50 dog units when assayed by the Cartland and Kuizenga method. The vehicle is physiologic solution of sodium chloride containing alcohol 10 per cent as a preservative.

Adrenal cortex extract (Upjohn) is prepared by the method of Cartland and Kuizenga (*J. Biol. Chem.* **116**: 57, 1936). Frozen beef adrenal glands are extracted with chilled acetone and the gland residue removed by filtration. The acetone extract is concentrated in vacuo below 45 C. and the aqueous fraction so obtained is freed of inactive lipid substances by filtration and extraction with petroleum ether. The aqueous fraction is extracted with ethylene dichloride, which removes the adrenal cortex activity, leaving the epinephrine behind in the aqueous phase. Ethylene dichloride is removed in vacuo, and the residue is dissolved in alcohol and partitioned between 70 per cent alcohol and petroleum ether. The 70 per cent alcohol solution is concentrated in vacuo below 45 C., and sodium chloride is added to the aqueous residue to make 0.9 per cent. An inactive precipitate is removed by filtration. Alcohol is added to make 10 per cent, and the solution is sterilized by Berkefeld filtration.

Adrenal cortex extract (Upjohn) is assayed biologically according to the Cartland and Kuizenga method (*Am. J. Physiol.* **117**: 678, 1936). Each cubic centimeter is obtained from not less than 40 Gm. of gland and contains not less than 50 dog units (2.5 rat units) when assayed according to the method of Cartland and Kuizenga. This assay method depends on the maintenance of life in adrenalectomized dogs. The epinephrine content of the extract as determined by the U. S. P. dog blood pressure method is less than 1: 200,000.

ANTIPNEUMOCOCCIC SERUM, TYPE I (See New and Nonofficial Remedies, 1940, p. 429).

Mulford Biological Laboratories, Sharp & Dohme, Inc., Philadelphia.

Antipneumococcic Serum Type I, Refined and Concentrated-Mulford.—(See New and Nonofficial Remedies, 1940, p. 430—formerly Pneumococcus Antibody Globulin Type I-Mulford): It is marketed in packages of one ampule-vial containing 20,000 units and packages of one ampule-vial containing 50,000 units accompanied by a vial containing a 1: 10 dilution of serum for the sensitivity test.

Council on Foods and Nutrition

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

FRANKLIN C. BING, Secretary.

FRUIT JUICES INCLUDING TOMATO JUICE (*See* Accepted Foods, p. 48).

Frank Farnsworth Fruit Farm, Waterville, Ohio.

FARNSWORTH BRAND APPLE JUICE UNSWEETENED.

Analysis (submitted by manufacturer).—Moisture 88.6%, total solids 11.4%, ash 0.2%, protein (N × 6.25) 0.1%, invert sugar 8.8%, sucrose 2.2%, carbohydrates other than crude fiber (by difference) 11.1%, specific gravity 1.052, titratable acidity expressed as malic acid 0.54%, malic acid content 0.39%. Tests of lead and arsenic show that the product complies with Council requirements for freedom from toxic spray residues.

The firm reports (1940) that the product contains from 0.11 to 0.43 mg. of ascorbic acid per hundred grams of juice.

Calories.—0.44 per gram; 12 per ounce.

GRAIN PRODUCTS (*See* Accepted Foods, p. 95).

Pillsbury Flour Mills Company, Minneapolis.

PILLSBURY'S FARINA WITH ADDED VITAMIN B_1, heat treated farina enriched with thiamine hydrochloride in such an amount that the product provides 900 international units of vitamin B_1 per pound.

Analysis (submitted by manufacturer).—Moisture from 9 to 12%, total solids from 91 to 88%, ash 0.4%, protein (N × 5.7) from 10.2 to 10.6%, fat (ether extract) from 0.5 to 0.8%, reducing sugars as dextrose [1] from 0.2 to 0.3%, sucrose from 0.9 to 1.3%, total carbohydrate other than crude fiber (by difference) from 78.6 to 77.6%, crude fiber from 0.3 to 0.5%.

The firm reports (1940) that the product contains approximately 1.97 international units of vitamin B per gram, 56 per ounce, 900 per pound.

Calories.—from 3.52 to 3.64 per gram; from 100 to 103 per ounce.

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, p. 156).

H. J. Heinz Company, Pittsburgh.

HEINZ BRAND CHICKEN FARINA VEGETABLE PORRIDGE WITH MILK, WHEAT GERM AND YEAST, a canned cooked mixture of milk, chicken, farina, wheat germ, dried brewers' yeast, celery, carrots, onions, sodium chloride and parsley.

Analysis (submitted by manufacturer).—Moisture 87.6%, total solids 12.4%, ash 1.3%, fat (ether extract) 0.6%, protein (N × 6.25) 2.9%, crude fiber 0.5%, total carbohydrates other than crude fiber (by difference) 7.1%, sucrose (Munson and Walker Method) 1.0%, calcium (Ca) 0.043%, phosphorus (P) 0.072%, iron (Fe) 0.0023%, copper (Cu) 0.00036%.

According to report of biologic assay (1939) this product contains 125 international units of vitamin A, 38 international units of vitamin B_1 and 42 Sherman-Bourquin units of riboflavin per hundred grams. Report of chemical titration (1939) shows the product contains 34 international units of vitamin C per hundred grams.

Calories.—0.45 per gram; 13 per ounce.

SUGARS AND SYRUPS (*See* Accepted Foods, p. 324).

A. E. Staley Manufacturing Company, Decatur, Ill.

STALEY'S SWEETOSE BRAND CRYSTAL SYRUP, containing sweetose (a brand of corn syrup) and granulated sugar syrup slightly flavored with vanilla extract.

Sweetose is a registered trade name for a corn syrup prepared according to United States Patent No. 2,201,609, May 21, 1940. In its production a mixture of cornstarch and water is subjected to acid hydrolysis until the dextrose content is about 40 per cent. The mixture then is neutralized, clarified and subjected to the further action of saccharifying enzymes from fungus until the syrup has a reducing-sugar content calculated as dextrose of about 62 per cent. At this point the syrup is heated to 170 F. and maintained at this temperature for a sufficient time to inactivate the mold enzymes. The syrup is further refined by repeated filtrations through bone charcoal and concentrated under vacuum to the desired consistency.

The syrup obtained by this dual conversion process contains 64.5 per cent reducing sugar calculated as dextrose and 34.2 per cent dextrins. Ordinary corn syrup contains about 42 per cent reducing sugars calculated as dextrose, and 65.5 per cent dextrins. Because of its composition Sweetose is sweeter than ordinary corn syrup and has a lower viscosity.[1] Its characteristics make it useful as a sweetening ingredient in frozen dairy products.[2] It is a satisfactory carbohydrate supplement in the feeding of infants.[3]

Analysis (submitted by manufacturer).—Moisture 25.5%, total solids 74.5%, ash (residue remaining at 500-550 C.) 0.3%, reducing sugars as dextrose 45.0%, sucrose 5.5%, dextrins 23.0%, total carbohydrates 74.2%.

Calories.—3.0 per gram; 85 per ounce.

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1. Determined according to the method of Schoorl, N., and Bogen-Regen, A.: Massanalytische Zuckerbestimmung, Ztschr. f. anal. Chem. **56**: 191, 1917.

1. Improved Sweetening Agent Developed from Corn Syrup, Food Industries **12**: 62 (Jan.) 1940.

2. Tracy, P. H., and Edman, G.: Tests of Enzyme-Converted Corn Syrup Reveal Desirable Properties, Food Industries **12**: 43 (Dec.) 1940.

3. Unpublished data supplied by Dr. Irving J. Wolman, Children's Hospital, Philadelphia.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 1, 1941

PARENTERALLY ADMINISTERED NITROGEN

Although the intravenous administration of nutrient dextrose is a method regularly employed in the clinic, this procedure furnishes no other nutritional elements except water. The requirement for electrolyte may be also readily fulfilled by the use of saline solution, and some efforts have been made to meet the nutritional and metabolic needs for fat by the intravenous administration of fine emulsions of fat.[1] The problem of protein requirement is more difficult; moreover, the importance of protein in the diet frequently becomes accentuated in instances in which oral intake of this foodstuff becomes difficult or impossible. Several approaches are available for parenteral administration of protein and some of these have yielded encouraging results. It has been possible[2] to maintain nitrogen equilibrium by the intravenous administration of plasma. However, the quantity of plasma required daily in order to meet the minimum protein requirements is relatively large. Furthermore, unhydrolyzed proteins, in the form of plasma, although perhaps making immediately available material for the replenishment of the plasma proteins, may not be directly utilizable for other body proteins. These must be synthesized in a specific manner from amino acids, for the problem of meeting the protein requirements of the entire organism is essentially one of supplying an adequate mixture of amino acids in sufficient quantity.

The demonstration that nitrogen metabolism requirements may be met not only by protein but by administration of a mixture of amino acids has greatly facilitated the possibility of meeting the nitrogen needs of the body. The recent investigations of Rose and his colleagues,[3] using mixtures of pure amino acids, have shown that by supplying only nine pure amino acids in the diet of the young rat the requirements for normal growth and nutrition can be met. Similar observations have been made with respect to the maintenance of nitrogen balance in dogs. Recently, Mitchell and his collaborators[4] have studied the problem of the amino acid requirements for maintenance of nitrogen equilibrium and have shown that the adult rat can be maintained in nitrogen equilibrium on a nitrogen supply containing only seven amino acids. These data immediately suggest a simple procedure for meeting the patient's needs for nitrogen when the parenteral route is indicated. However, the high cost of the individual amino acids makes unpractical the intravenous administration of mixtures of these compounds.

An economical approach to the problem of providing amino acids involves the hydrolysis of a relatively pure, cheap and complete protein to its constituent amino acids, removal of the hydrolytic reagents to render the mixture nontoxic, and utilization of the mixture for intravenous injection. Thus, Elman and Weiner[5] employed an amino acid mixture prepared by the acid hydrolysis of casein. Two amino acids, tryptophan, which is destroyed by acid hydrolysis, and cystine, which is low in casein, were added to the hydrolysate mixture, which was then made up as a 10 per cent solution, passed through a sterile Seitz filter and poured directly into 5 or 10 per cent dextrose solution as ordinarily prepared for routine use. Each liter contained about 20 Gm. of amino acids and 80 Gm. of dextrose. This volume of the solution could be given slowly over two hours, with none of the amino acids appearing in the urine and without objective reactions. Subjectively, some patients reported a sense of warmth; there was evident a slight peripheral vasodilatation. Of some twenty patients given amino acids intravenously, eight received large amounts of amino acids for more than one or two days. Chemical and clinical observations indicated rapid utilization of the injected amino acids, and nitrogen balance was achieved in some instances immediately after the first injection. Regeneration of serum protein with concomitant reduction of the nutritional edema were also evident in some cases.

The observations of Elman and Weiner have been confirmed and expanded by other investigators. Shohl and his collaborators,[6] working with normal infants, succeeded in establishing positive nitrogen balance by either oral or intravenous administration of hydrolyzed casein prepared by enzymatic digestion. Although native casein was shown to be absent by negative sensitization tests with guinea pigs, febrile reactions were noted in most instances. However, Farr and MacFayden[7] have reported the clinical use of an enzymatic digest of casein with no untoward reactions and with

1. Holt, L. E., Jr.; Tidwell, H. C., and Scott, T. F. M.: The Intravenous Administration of Fat: A Practical Therapeutic Procedure, J. Pediat. **6**: 151 (Feb.) 1935.
2. Holman, R. L.; Mahoney, E. B., and Whipple, G. H.: Blood Plasma Protein Given by Vein, Utilized in Body Metabolism, J. Exper. Med. **59**: 269 (March) 1934.
3. Rose, W. C.: Physiol. Rev. **18**: 109 (Jan.) 1938. Rose, W. C., and Rice, E. E.: Science **90**: 186 (Aug. 25) 1939.
4. Burroughs, E. W.; Burroughs, H. S., and Mitchell, H. H.: J. Nutrition **19**: 363 (April) 1940.
5. Elman, Robert, and Weiner, D. O.: Intravenous Alimentation, J. A. M. A. **112**: 796 (March 4) 1939.
6. Shohl, A. T.; Butler, A. M.; Blackfan, K. D., and MacLachlan, E.: J. Pediat. **15**: 469 (Oct.) 1939.
7. Farr, L. E., and MacFayden, D. A.: Proc. Soc. Exper. Biol. & Med. **42**: 444 (Nov.) 1939.

good utilization of the administered nitrogen in four children with nephrosis. The analytic data indicate that the nitrogen supplied by the amino acid mixture was utilized for nutritional purposes. More recently, Altshuler, Hensel and Sahyun [8] have reported the establishment of nitrogen equilibrium in both normal and postoperative patients following the subcutaneous or intravenous injection of a mixture containing all the essential amino acids in the form of a hydrolysate of casein supplemented with tryptophan and cystine.

The chief problem at present appears to be the development of a reproducible method for the preparation of the amino acid mixtures. Enzymatic digestion of a protein like casein, which contains a representative mixture of amino acids, suffers from the difficulty of reproducibility and from the possibility of unpleasant clinical reactions due to larger molecules of the peptone type. Acid hydrolysis of the protein, the simplest of the hydrolytic procedures, destroys the amino acid tryptophan and some cystine. The high cost of the former amino acid is again a problem, since efficient utilization of the parenterally administered amino acid mixture appears possible only in the presence of tryptophan and the other essential amino acids. The problem of a convenient and economical method of preparing a protein hydrolysate suitable for injection does not, however, appear to be insurmountable. Its solution should open the way to further important applications of the methods which have given favorable results in clinical studies of the utilization of parenterally administered nitrogen.

ENCEPHALOMYELITIS IN MICE

The close resemblance between human poliomyelitis and spontaneous encephalomyelitis in mice enhances the value of recent contributions to the epidemiology of this veterinary disease. Seven years ago Theiler [1] found an occasional young mouse with flaccid paralysis of the hind legs among the stock mice purchased by his laboratory. Stock mice similarly affected have subsequently been described by numerous European and Asiatic investigators,[2] an average of about one purchased mouse in 3,000 exhibiting this disease. Five strains of the specific neurotropic virus responsible for this paralysis have been isolated by Theiler and propagated by brain to brain inoculation.

In mice injected intracerebrally with this isolated virus the first sign of the infection is almost invariably a weakness of one of the fore limbs, which usually develops after an incubation period varying from seven to thirty days. This weakness is progressive, rapidly changing to a flaccid paralysis and almost invariably ending in paralysis of both hind legs. In a few of the animals the disease may be arrested at this stage. In a slightly larger percentage, severe paralysis with emaciation of the hind legs may persist for many months. In most mice, however, the paralysis ends fatally. A fairly large percentage of the younger mice may even die before showing distinct paralytic symptoms.

Mice which survive the experimental infection are almost invariably carriers of the virus, the infectious agent being recoverable from the spinal cord for at least one year after the date of inoculation. Paralyzed mice are immune to a second intracerebral injection, as are also a number of mice which have not shown signs of paralysis after the first intracerebral injection. Intranasal instillation of massive doses is the only other way of transferring the disease.

The anatomic basis of the paralysis is an acute necrosis of the ganglion cells of the anterior horn of the spinal cord. Ultrafiltration experiments show that the virus is approximately 13 to 19 millimicrons in diameter, about the same size as human poliomyelitis virus. Attempted cross immunizations, however, suggest that there is no antigenic similarity between the two infectious agents.

Interest in encephalomyelitis of mice was heightened by the more recent discovery by Olitsky [3] that an infectious agent indistinguishable from Theiler's neurotrophic virus can be isolated from the intestinal contents of normal mice. Almost every one of the normal stock mice from 1 to 2 months of age was found to be a carrier of an intestinal virus which on intracerebral inoculation into normal mice induced the characteristic paralytic symptoms. Theiler and Gard [4] afterward found that at least two thirds of their normal stock mice approximately 6 months of age passed the neurotrophic virus in the feces. In normal mice which pass this virus the infectious agent has been repeatedly demonstrated in the intestinal walls but has never been found in the central nervous system, thoracic viscera or other abdominal organs, with the sole exception of its occasional presence in the mesenteric lymph glands.

Mice are apparently free from this intestinal virus at birth and presumably acquire the infection shortly after weaning. The intestinal infection may persist for at least six months, at which time it usually ends spontaneously. As a result of this carrier condition the mice may develop a partial immunity. If so, immunity with age might cease to be synonymous with sexual maturity. For some unknown reason this apparently nonpathogenic intestinal virus invades the central nervous system in about one mouse in 3,000, producing paralytic symptoms. Poliomyelitis in mice, therefore, is a rare and accidental event, presumably due to some unknown gastrointestinal disturbance or deficiency in

8. Altshuler, S. S.; Hensel, H. M., and Sahyun, M.: Am. J. M. Sc. **200**: 239 (Aug.) 1940.

1. Theiler, Max: J. Exper. Med. **65**: 705 (May) 1937.

2. Sabin, A. B., and Olitsky, P. K.: J. Exper. Med. **67**: 201 (Feb.) 1938. Gildemeister, E., and Ahlfeld, I.: Centralbl. f. Bakt. **142**: 144 (Aug. 18) 1938. Iguchi, Masao: Kitasato Arch. Exper. Med. **16**: 56 (Jan.) 1939.

3. Olitsky, P. K.: Proc. Soc. Exper. Biol. & Med. **41**: 434 (June) 1939; J. Exper. Med. **72**: 113 (Aug.) 1940.

4. Theiler, Max, and Gard, Sven: J. Exper. Med. **72**: 79 (July) 1940.

specific antibody production. There is, of course, no evidence at the present time that these results are applicable to human poliomyelitis.

Current Comment

DANGEROUS DRUGS

The Federal Food, Drug and Cosmetic Act prohibits, among other matters, the introduction or delivery for introduction into interstate or foreign commerce or commerce within the District of Columbia or the territories, or the manufacture within the District of Columbia or one of the territories, of a drug that is misbranded. Section 502 (j) provides that a drug shall be deemed to be misbranded if it is dangerous to health when used in the dosage or with the frequency or duration prescribed, recommended or suggested in its labeling. The Food and Drug Administration has informally declared that there are a number of drugs which are in fact dangerous if consumed other than on expert advice and under constant supervision. There are other drugs, however, which may safely be distributed to the public for consumption in small doses under labels bearing adequate directions for use and adequate warnings against misuse but which become dangerous drugs for self medication when administered in larger doses. With the understanding that it is not possible to list all of the preparations which fall under either of these two categories, the Food and Drug Administration has from time to time informally announced, as a guide to the drug industry and to pharmacists, that the drugs listed in the following statement are dangerous to health and should not be distributed over the counter for indiscriminate lay use but should be sold only on the prescription of a physician, dentist or veterinarian:

1. Drugs containing significant amounts of such ingredients as:

Aconite.
Aminopyrine.
Aspidium (male fern).
Benzedrine sulfate (for internal administration).
Cantharides (for internal use).
Carbon tetrachloride.
Chenopodium oil.
Chrysarobin.
Chrysophanic acid
Cinchophen and its derivatives, including neocinchophen.
Colchicine.
Colchicum.
Digitalis (in therapeutically effective proportion).
Dinitrophenol.
Emetine.
Goa powder.
Phosphorus or phosphides.
Radium.
Santonin.
Squill (in therapeutically effective proportion).
Strophanthus or other pharmacologically related drugs (in therapeutically effective proportion).
Sulfanilamide.
Sulfapyridine.
Sulfathiazole.
Tetrachlorethylene.
Thiocyanates.
Thymol.
Thyroid.

2. Drugs in certain dosages or concentration:

Bromides if dosage provided involves the consumption of more than 30 grains a day or more than 15 grains during any three hour period.
Acetanilid if dosage provided involves the consumption of more than 5 grains daily or more than 2½ grains during any three hour period.
Bromide-acetanilid combinations if dosage provided involves the consumption of more than a total daily dose of 15 grains of a bromide and 5 grains of acetanilid, or more than 7½ grains of a bromide and 2½ grains of acetanilid during any three hour period.
Acetophenetidin if the daily dosage provided exceeds 15 grains.
Antipyrine if the daily dosage provided exceeds 15 grains.
Epinephrine in a solution of 1 per cent or stronger.
Ipecac it the daily dosage provided exceeds 10 grains.
Strychnine if the daily dosage provided exceeds 1/30 grain.
Ointments containing more than 0.2 per cent of mercury bichloride or more than 5 per cent of ammoniated mercury.

The Food and Drug Administration has also issued an informal warning to the drug industry and to pharmacists that drugs labeled "Caution: To be used only by or on the prescription of a physician [or a dentist or a veterinarian]" should not be sold otherwise than on prescription.

VITAMIN K AND THE DAMAGED LIVER

The response of patients with hypoprothrombinemia to the administration of the antihemorrhagic vitamin K is commonly incomplete. Brinkhous and Warner[1] studied the effect of vitamin K on animals with experimental liver injury. It will be recalled that an experimental prothrombin deficiency may be produced by injury to the liver or by partial or complete extirpation of that organ as well as by withholding vitamin K from the diet or preventing the absorption of this factor. The effectiveness of vitamin K in raising the prothrombin level of the blood and, consequently, correcting the tendency to hemorrhage in cases in which an existing hypoprothrombinemia is due to a deficiency of vitamin K is well appreciated. In contrast, Brinkhous and Warner have now demonstrated that, when the low level of blood prothrombin is due to injury to the liver, the administration of vitamin K may be wholly ineffective. These investigators used dogs in which liver damage had been produced by chronic chloroform intoxication. In such dogs the administration of vitamin K fails to modify in any way either the fall in prothrombin with chloroform administration or the rise in prothrombin during the recovery period. Somewhat comparable to this observation is that of Andrus, Lord and Moore,[2] who have reported that the administration of vitamin K does not alter the typical decrease in the plasma prothrombin level that is observed in hepatectomized dogs. Prothrombin deficiency observed in the clinic may often be due to a combination of two factors, liver damage and a deficiency of vitamin K. In these cases the response to the administration of vitamin K may be incomplete; for, as pointed out by Brinkhous and Warner, it may correct the latter condition but an excess of vitamin cannot be expected to compensate for the element of liver injury. Lord, Andrus and Moore[3] give accounts of clinical cases that did not respond satisfactorily to vitamin K therapy. In one case a postmortem examination revealed massive hepatic necrosis and in another the liver was cirrhotic and much reduced in size. There seems to be little doubt that the condition of the liver is important in determining the response of the prothrombin level to vitamin K.

1. Brinkhous, K. M., and Warner, E. D.: The Effect of Vitamin K on Hypoprothrombinemia of Experimental Liver Injury, Proc. Soc. Exper. Biol. & Med. **44**: 609 (June) 1940.
2. Andrus, W. D.; Lord, J. W., Jr., and Moore, R. A.: The Effect of Hepatectomy on the Plasma, Prothrombin and the Utilization of Vitamin K, Surgery **6**: 899 (Dec.) 1939.
3. Lord, J. W., Jr.; Andrus, W. D., and Moore, R. A.: Metabolism of Vitamin K and Role of the Liver in Production of Prothrombin in Animals, Arch. Surg. **41**: 585 (Sept.) 1940.

MEDICAL PREPAREDNESS

In this section of ***The Journal*** *each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.*

CONFERENCE ON PROBLEMS OF MEDICAL PREPAREDNESS

Meeting of the Committee on Medical Preparedness, American Medical Association Building, Chicago, February 15

DR. JAMES E. PAULLIN, Atlanta, Ga., Presiding

The following, among other visitors were in attendance:

Dr. Arthur W. Booth, Elmira, N. Y.
Dr. Charles A. Dukes, Oakland, Calif.
Dr. Morris Fishbein, Editor, THE JOURNAL, Chicago.
Dr. Roy W. Fouts, Omaha.
Dr. Stanley H. Osborn, Hartford, Conn.
Dr. John O'Shea, Spokane, Wash.
Dr. Walter G. Phippen, Salem, Mass.
Dr. Fred W. Rankin, Lexington, Ky.
Dr. Harvey B. Stone, Baltimore.
Dr. Sam E. Thompson, Kerrville, Texas.
Dr. Nathan B. Van Etten, New York.
Dr. Olin West, Secretary and General Manager, American Medical Association, Chicago.
Capt. Dallas G. Sutton, Naval Medical Center, Washington, D. C.
Dr. Warren F. Draper, U. S. Public Health Service, Washington, D. C.
Dr. J. A. Crabtree, U. S. Public Health Service, Washington, D. C.
Dr. C. Sidney Burwell, Chairman, Medical Education Committee, Boston.
Lieut.-Col. G. C. Dunham, U. S. Army, Washington, D. C.
Dr. Willard C. Rappleye, New York.
Dr. Harold S. Diehl, Minneapolis.
Dr. John H. Musser, New Orleans.
Lieut.-Col. W. C. Munly, U. S. Army, Washington, D. C.
Dr. E. H. Cushing, National Research Council, Washington, D. C.
Dr. Reginald Fitz, Boston.
Dr. H. G. Weiskotten, Syracuse, N. Y.
Dr. Emmet B. Bay, Chicago.
Dr. Walter Bierring, Des Moines, Iowa.
Dr. John W. Spies, dean, Texas University School of Medicine, Galveston.
Dr. Ray Lyman Wilbur, Council on Medical Education and Hospitals, Stanford University, Calif.
Lieut.-Col. Charles G. Hutter, Chicago.
Dr. Norman M. Scott, Trenton, N. J.
Dr. F. H. Arestad, American Medical Association, Chicago.
Dr. A. R. Bowles, Council on Medical Education and Hospitals, Chicago.
Dr. William D. Cutter, Council on Medical Education and Hospitals, Chicago.
Mr. Harvey T. Sethman, Denver.
Dr. R. G. Leland, American Medical Association, Chicago.
Dr. Charles G. Heyd, New York.

Chairman Paulin introduced members of the Committee on Medical Preparedness, representatives of the Army, the Navy and the United States Public Health Service, members of the Subcommittee on Education of the Health and Medical Committee, and members of the Council on Medical Education and Hospitals of the American Medical Association.

Dr. Olin West presented a confidential communication from the British Medical Association, which was given consideration.

Dr. E. H. Cushing said that it had been arranged in England that all official requests for medical supplies and personnel are to be routed through one Red Cross to another Red Cross. The American Red Cross is using the National Research Council in an advisory capacity.

PLANS FOR PROCUREMENT OF PERSONNEL

Dr. Olin West submitted the communication from the Adjutant General's Office, War Department, covering the assistance of the American Medical Association in the classification and procurement of physicians for military service (see Medical Preparedness, THE JOURNAL, February 22, p. 709).

It was brought out that physicians are not now commissioned above the grade of lieutenant, except for those in the organized units who are to be called into service only in case of war. At present no doctor is commissioned in the Medical Reserve Corps over the age of 35.

The conference discussed the problem of securing for physicians commissions of a rank commensurate with the positions they occupy and the services they render. Consideration was given also to the utilization of the services of physicians whose physical condition may be such as to make them unable to qualify under the regulations but who yet may be capable of giving excellent service as physicians.

Dr. Sam Thompson presented a plan for the procurement of medical personnel, which was referred to the Surgeon General's Office for consideration.

SUPPLY AND DEFERMENT OF MEDICAL STUDENTS

Dr. Olin West presented a communication from Mr. Clarence Dykstra, director of Selective Service. Dr. Sidney Burwell reported the recommendations made by the Subcommittee of the Committee on Health and Medical Education. After extended discussion a special committee was appointed to draw up a communication for transmission to the Selective Service Board (see editorial THE JOURNAL, February 22, p. 706).

Dr. Weiskotten said he did not believe there is a medical school in the country which should increase the size of its student body or that would be in a position to maintain what we consider adequate standards if they should materially increase the size of the student body.

AVAILABLE MEDICAL PERSONNEL

It was brought out that at present there are 13,861 medical reserve officers. Of this number 3,556 were on active duty as of February 14. There are approximately 8,000 vacancies in the Medical Reserve Corps to meet the demands of our present procurement objective of 20,000. On the basis of 6.5 medical officers per thousand men, 9,100 medical officers will be needed yearly for the present training program, which will continue for a five year period. With the rapid expansion of the Air Corps, more than 9,100 may be needed. Of the 9,100 there are 1,230 in the medical corps of the regular army and 1,100 in the National Guard, so that 7,000 to 8,000 medical reserve officers will be needed yearly for five years. It is estimated that of the 5,200 graduates yearly not more than 3,000 will be available for the armed forces, with deferments due to dependence, physical disqualifications and other factors.

Authority has been given for the formation of sixty general hospitals, thirty evacuation hospitals and twenty-three surgical hospitals or sponsored units. Thus far forty-seven general hospitals, eighteen evacuation hospitals and seven surgical hospitals have been organized.

It was brought out that there are on duty in the Navy 886 medical officers, 28 acting assistant surgeons, to which 34 have recently been added, 71 medical officers retired who have been recalled to active duty and 350 medical officers of the Naval Reserve on active duty, making a total of 1,335. All figures are based on a maximum of 500,000 personnel, of which some 400,000 are already on active duty. In the Naval Reserve there are at present 1,763 medical officers, or a shortage of 1,134. There are 300 applications pending.

MISCELLANEOUS

Consideration was given also to the problem of physicians with foreign licenses, selective service boards and difficulties of men already in service.

ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

WAR DEPARTMENT

The following additional medical reserve corps officers have been ordered to extended active duty by the War Department, Washington, D. C.:

BANICK, V. William, Captain, Scranton, Pa.
BARKER, Carl DeVaux, 1st Lieut., Paris, Texas.
BIRDSONG, William F., Captain, Texon, Texas.
BROWNTON, Sheldon Seymour, Captain, Clayton, Mo.
CASPERS, Carl Gerald, 1st Lieut., Minneapolis.
DEWIRE, Merrill Brown, Major, Reading, Pa.
DIAMOND, Oscar Kantor, 1st Lieut., Mount Vernon, N. Y.
FLYNN, Vincent Patrick, Captain, Pasadena, Calif.
FRIEDMAN, Eliot Marvin, 1st Lieut., New York.
GARVIN, Paul Drews, 1st Lieut., Boulder, Colo.
GILPIN, Burhl Bobbitt, Jr., 1st Lieut., Medford, Ore.
HERMANN, Robert C., 1st Lieut., Yoakum, Texas.
HILL, Thurman Knight, 1st Lieut., Nashville, Tenn.
JACOBSON, Seymour Shulman, 1st Lieut., Brooklyn.
KALIL, Charles, 1st Lieut., Spartanburg, S. C.
McGLONE, Frank Bartlett, 1st Lieut., Denver.
OSBORNE, Charles Dunlap, Lieut. Col., Sedalia, Mo.
PARNALL, Christopher, Jr., Captain, Rochester, N. Y.
RANDALL, Charles C., 1st Lieut., Iowa City.
ROGERS, Benjamin C., 1st Lieut., Nashville, Tenn.
ROHNER, Ralph George, 1st Lieut., Mitchell, Ind.
ROSENFELD, Julius L., 1st Lieut., New York.
ROSENFELD, Robert Thorman, 1st Lieut., Chicago.
RUSSIN, Lester Allen, 1st Lieut., Iowa City.
TANZ, Stanley Stuart, 1st Lieut., New Rochelle, N. Y.
THORNTON, John Thurston, Jr., 1st Lieut., Wheeling, W. Va.
VAN KINSBERGEN, Maurice, Captain, Washington, D. C.
VOSS, Bernard Jerome, 1st Lieut., Columbia, Utah.
WILSON, Joseph Crawford, 1st Lieut., Hollandale, Miss.

Order Revoked

McCAULEY, Lewis Ross, 1st Lieut., Punxsutawney, Pa.

CORRECTION

Lieutenants Byars.—In THE JOURNAL, Nov. 30, 1940, page 1892, the name Blars, Perry J. C., 1st Lieut., Lampasas, Texas, should have been spelled Byars, and the next name in the list should have been Byars, Stevens, 1st Lieut., Spring Creek, Texas.

FIRST CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, First Corps Area. The First Corps Area comprises the states of Maine, Vermont, New Hampshire, Rhode Island, Massachusetts and Connecticut.

ARCIERO, Michael, Lieut., Providence, R. I., Fort Benning, Ga.
BARNES, Louis D., Major, Lanesboro, Mass., Carlisle Barracks, Pa.
BRADY, Charles E., Lieut., Barret, Vt., Camp Lee, Va.
BRISLIN, William W., Lieut., Alstead, N. H., Camp Lee, Va.
CROSS, Merrill M., Lieut., Clinton, Mass., Army Medical Center, Washington, D. C.
CUTLER, Joseph G., Lieut., Salem, Mass., Camp Lee, Va.
DAMIANI, Clito R., Lieut., Newtonville, Mass., Camp Edwards, Mass.
EBBETT, George H., Lieut., Houlton, Maine, Fort Benning, Ga.
EDSON, Ralph H., Lieut., Shelton, Conn., Fort Benning, Ga.
FLYNN, Timothy P., Lieut., Lancaster, N. H., Fort Benning, Ga.
HUNTRESS, William W., Lieut., Fall River, Mass., Army Medical Center, Washington, D. C.
LA POINTE, Roland E., Lieut., Manchester, N. H., Fort Williams, Maine.
LARSON, Carroll B., Lieut., Brookline, Mass., Fort Benning, Ga.
LO VETERE, Angelo A., Captain, Kensington, Conn., Camp Lee, Va.
MURPHY, Theodore P., Lieut., Montpelier, Vt., Camp Lee, Va.
QUIGLEY, Thomas J., Lieut., Boston, Camp Edwards, Mass.
SULLIVAN, Arthur B., Lieut., West Hartford, Conn., Camp Edwards, Mass.
WARD, John V., Captain, Portland, Maine, Camp Lee, Va.
ZONDERMAN, Bernard, Lieut., Revere, Mass., Fort Banks, Mass.

Orders Revoked

The following medical reserve officers have had their orders revoked:

BEEAKER, Vincent H., Lieut., Lewiston, Maine.
CALCAGNI, Oscar H., Lieut., Morrisville, Vt.
CARROLL, Francis B., Lieut., Great Barrington, Mass.
CRISCUOLO, Joseph A., Lieut., New Haven, Conn.
FULLER, Richard C., Lieut., Saxtons River, Vt.
GORMAN, Richard J., Lieut., Winchendon, Mass.
HADLER, Arthur J., Lieut., Boston.
LARSON, Carroll B., Lieut., Brookline, Mass.
LUCKNER, Wendelin G., Lieut., Stafford Springs, Conn.
NEWTON, AARON W., Lieut., Greenfield, Mass.
WHELAN, Edmund L., Lieut., East Boston, Mass.

THIRD CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Third Corps Area. The Third Corps Area comprises the states of Pennsylvania, Virginia, District of Columbia and Maryland.

BAKER, Harold Frederick, Lieut. Col., Muncy, Pa., Army Medical Center, Washington, D. C.
BAUERSFELD, Emil Herbert, 1st Lieut., Washington, D. C., Fort Belvoir, Va.
BENZ, George Henry, 1st Lieut., Pittsburgh, Fort Eustis, Va.
BLANK, Philip, 1st Lieut., Pittsburgh, Fort Eustis, Va.
BRANDT, Charles Richard, Captain, Mechanicsburg, Pa., Medical Field Service School, Carlisle Barracks, Pa.
BUTLER, Henry Lee, 1st Lieut., Baltimore, Indiantown Gap, Pa.
CAMPBELL, Edgar Thrall, 1st Lieut., Hagerstown, Md., Fort Eustis, Va.
CHAPMAN, William Holmes, Jr., Captain, Suffolk, Va., Fort Eustis, Va.
CLOSE, Henry Pletcher, 1st Lieut., Germantown, Pa., Indiantown Gap, Pa.
COHEN, Hilliard, 1st Lieut., Baltimore, Fort Monroe, Va.
CURD, Howard Harman, 1st Lieut., University, Va., Fort George G. Meade, Md.
DAWE, George Griffith, Captain, Mifflintown, Pa., Fort Belvoir, Va.
DILCHER, Robert Horn, 1st Lieut., Allentown, Pa., Indiantown Gap, Pa.
DOLLMAN, Clarence Mazarin, Lieut. Col., Washington, D. C., Fitzsimons General Hospital, Denver.
DOUGLAS, Harry Samuel, 1st Lieut., Washington, D. C., Camp Lee, Va.
EGBERT, Ernest Wayne, 1st Lieut., Chester, Pa., Fort George G. Meade, Md.
FAW, Wylie Melvin, Jr., 1st Lieut., Cambridge, Md., Fort Story, Va.
GILARDI, Robert John, 1st Lieut., Pittsburgh, Camp Shelby, Miss.
GOLDBERG, Harold Ernest, 1st Lieut., Philadelphia, Fort McClellan, Ala.
GRANA, Philip Charles, 1st Lieut., Harrisburg, Pa., Indiantown Gap, Pa.
GRAY, Raymond John, Captain, Pittsburgh, Fort Eustis, Va.
HARNISH, Robert Livingstone, 1st Lieut., Denver, Pa., Fort Belvoir, Va.
HARRIS, Harold Byron, 1st Lieut., Bellefonte, Pa., Fort Eustis, Va.
HECKER, Arthur Orr, Captain, Harrisburg, Pa., Indiantown Gap, Pa.
HERR, Paul Sylvester, Captain, Harrisburg, Harrisburg, Pa.
HINDMAN, Thomas Audley Newcomer, 1st Lieut., Burgettstown, Pa., Fort Monroe, Va.
HOCH, Vincent Adolphus, 1st Lieut., Butler, Pa., Fort George G. Meade, Md.
ILYAS, Shakir Thomas, 1st Lieut., Rural Valley, Pa., Fort Eustis, Va.
IRVING, Richard Henson, 1st Lieut., Washington, D. C., Camp Devens, Mass.
JACKSON, Richard Lee, 1st Lieut., Arlington, Va., Fort Meade, Md.
JACOBSON, Robert Morris, 1st Lieut., Punxsutawney, Pa., Fort Belvoir, Va.
JEFFREY, Millard, 1st Lieut., Washington, D. C., Fort George G. Meade, Md.
KAPO, Peter Joseph, Major, Mahanoy City, Pa., Camp Lee, Va.
KILLIUS, William Joseph, 1st Lieut., Johnstown, Pa., Fort Monroe, Va.
KITCHEL, James Roderick, 1st Lieut., Philadelphia, Indiantown Gap, Pa.
KRAUSE, Edward Ab, Major, Washington, D. C., Fort Story, Va.
KREIGER, Alexander Allen, 1st Lieut., Pittsburgh, Indiantown Gap, Pa.
LECHAUSSE, Ralph Maurice, 1st Lieut., Pardee, Va., Fort Eustis, Va.
LIVINGOOD, Clarence Swineheart, 1st Lieut., Philadelphia, Indiantown Gap, Pa.
LUPO, Deonis Matteo, 1st Lieut., Baltimore, Fort Eustis, Va.
MAGNESS, Stephen Lee, 1st Lieut., Catonsville, Md., Fort George G. Meade, Md.
MAHER, Regis Martin, 1st Lieut., Uniontown, Pa., Camp Lee, Va.
MARKLEY, Ralph, 1st Lieut., New Castle, Pa., Indiantown Gap, Pa.
MARTIN, George Vincent, Jr., Captain, Washington, D. C., Indiantown Gap, Pa.
McELROY, Walton Dixon, 1st Lieut., McKeesport, Pa., Fort George G. Meade, Md.
MILLER, Kenneth Frederick, Major, West View, Pa., Washington, D. C.
MOYER, Donald Grosch, Major, Wyomissing, Pa., Fort Monroe, Va.
MUSSO, Charles Marion, Jr., 1st Lieut., Washington, D. C., Fort George G. Meade, Md.
OLAH, George William, 1st Lieut., Pittsburgh, Camp Lee, Va.
PEPPER, Dickinson Sergeant, 1st Lieut., Bala-Cynwyd, Pa., Indiantown Gap, Pa.
PHILLIPS, Joseph Thomas, Jr., 1st Lieut., Norfolk, Va., Fort Eustis, Va.

RABOLD, Bernard Louis, 1st Lieut., Baltimore, Fort Eustis, Va.
REHER, Charles August, Jr., Captain, Clinton, Pa., Fort Monroe, Va.
REIZMAN, Ivy Albert, Major, Washington, D. C., Fort Belvoir, Va.
RIESTER, Herman William, 1st Lieut., Erie, Pa., Indiantown Gap, Pa.
ROSENBLOOM, Meyer Abraham, 1st Lieut., Pittsburgh, Fort Monroe, Va.
ROSENFELD, David Herman, 1st Lieut., Richmond, Va., Camp Lee, Va.
SAYLOR, Clyde Llewellyn, 1st Lieut., Meyersdale, Pa., Camp Lee, Va.
SCHAEFER, William Carl, 1st Lieut., Pittsburgh, Camp Lee, Va.
SHAULIS, Frederick Steinrod, 1st Lieut., Indiana, Pa., Fort Eustis, Va.
SCHWAB, Carl Leopold, 1st Lieut., Harrisburg, Pa., Indiantown Gap, Pa.
SCHWARTZMAN, Joel Jay, 1st Lieut., Philadelphia, Camp Lee, Va.
SCOTT, James Vickers, 1st Lieut., Pittsburgh, Fort Belvoir, Va.
SHOVLIN, John Patrick, 1st Lieut., Waymart, Pa., Fort Meade, Md.
SIMPSON, Robert Chester, Captain, Ridgway, Pa., Edgewood Arsenal, Md.
SLOANE, Milton Bennet, 1st Lieut., Pittsburgh, Fort Bragg, N. C.
STUTZMAN, Clyde Malverne, Jr., 1st Lieut., South Williamsport, Pa., Camp Lee, Va.
THOMPSON, John Edward, 1st Lieut., Youngsville, Pa., Fort George G. Meade, Md.
VERMILYA, Walter Emerson, 1st Lieut., Clifton Forge, Va., Camp Lee, Va.
VERNOCY, William Charles, 1st Lieut., Coraopolis, Pa., Camp Lee, Va.
WAGNER, Ira Garfield, Captain, Lancaster, Pa., Fort George G. Meade, Md.
WAGNER, Philip Sigmund, 1st Lieut., Baltimore, Fort Belvoir, Va.
WALMER, Charles Richard, 1st Lieut., Wilkinsburg, Pa., Camp Lee, Va.
WATKINS, Evan Lloyd, 1st Lieut., Philadelphia, Camp Shelby, Miss.
WATTS, Thomas Duvall, Captain, Richmond, Va., Fort Meade, Md.
WEAVER, Thomas David Littler, 1st Lieut., Bellevue, Pa., Fort Eustis, Va.

FOURTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fourth Corps Area. The Fourth Corps Area comprises the states of Tennessee, North Carolina, South Carolina, Alabama, Georgia, Mississippi, Florida and Louisiana.

BREWER, Frederic W., 1st Lieut., Port Sulphur, La., Camp Lee, Va.
BROWN, Ralph E., 1st Lieut., Barnwell, S. C., Fort McPherson, Ga.
CHRISTIAN, Robert H., 1st Lieut., Baldwyn, Miss., Fort Benning, Ga.
COHEN, Emanuel, 1st Lieut., Pace, Miss., Camp Lee, Va.
COLEMAN, James A., Major, Jena, La., Camp Blanding, Fla.
FOGEL, Julius M., 1st Lieut., Fort Benning, Ga., Fort Benning, Ga.
FOX, Edward F., 1st Lieut., Miami, Fla., Camp Forrest, Tenn.
GREEN, Edgar V., 1st Lieut., Youngsville, N. C., Fort Bragg, N. C.
JEANES, Robert P., 1st Lieut., Easley, S. C., Camp Forrest, Tenn.
KING, James M., 1st Lieut., Tullahoma, Tenn., Camp Grant, Ill.
MAYER, Orlando B., Captain, Columbia, S. C., Camp Forrest, Tenn.
MOORHEAD, Robert J., 1st Lieut., Yazoo City, Miss., Camp Lee, Va.
MOULEDOUS, Shelly J., 1st Lieut., Abbeville, La., Camp Lee, Va.
PREJEAN, James L., 1st Lieut., Sunset, La., Camp Lee, Va.
SAPP, James W., 1st Lieut., Havana, Fla., Fort Benning, Ga.
SCOTT, William S., 1st Lieut., Jonesville, S. C., Camp Grant, Ill.
STECHER, Joseph L., 1st Lieut., Orlando, Fla., Camp Grant, Ill.
WARD, Francis O., 1st Lieut., Macon, Ga., Camp Wheeler, Ga.
WILSON, James S., 1st Lieut., Kenansville, N. C., Fort Bragg, N. C.

Orders Revoked

BRANDON, Robert W., Jr., 1st Lieut., Martin, Tenn.
DUCKWALL, Fred M., 1st Lieut., Kingsport, Tenn.
JORDAN, Henry C., Captain, Robertsdale, Ala.
MILLING, Chapman J., 1st Lieut., Columbia, S. C.
SNELLING, William R., 1st Lieut., Fernandina, Fla.
SYKES, Charlie L., 1st Lieut., Pilot Mountain, N. C.
WHITMAN, Oscar F., 1st Lieut., Statesboro, Ga.

FIFTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fifth Corps Area. The Fifth Corps Area comprises the states of Ohio, West Virginia, Indiana and Kentucky.

BAKER, Philip H., 1st Lieut., Columbus, Ohio, Fort Knox, Ky.
BRADSHAW, Wilber V., Captain, Stanford, Ky., Fort Knox, Ky.
DANCHIK, Sol A., 1st Lieut., Columbus, Ohio, Fort Knox, Ky.
DRYE, James C., 1st Lieut., Louisville, Ky., Fort Knox, Ky.
FRYE, Carl M., Captain, Newark, Ohio, Fort Knox, Ky.
MILLER, Alfred O., 1st Lieut., Louisville, Ky., Fort Knox, Ky.
PERRY, Claude S., Major, Columbus, Ohio.
PETRO, George J., 1st Lieut., Louisville, Ky., Fort Knox, Ky.
PHARR, Percy P., 1st Lieut., Charleston, W. Va., Fort Knox, Ky.
PILLERSDORF, Louis, 1st Lieut., Cleveland.
PIRKEY, Everett L., 1st Lieut., Louisville, Ky., Fort Knox, Ky.
ROHRER, James R., Captain, Fort Knox, Ky.
SMITH, Earl E., Captain, Cleveland, Fort Knox, Ky.
SONNE, Irvin H., Major, Louisville, Ky.
WILLETT, Irving, Major, Fort Wayne, Ind.

SEVENTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Seventh Corps Area, which comprises the state of North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri, Arkansas and Wyoming.

MOTHERSHEAD, John Lee, 1st Lieut., St. Louis, Jefferson Barracks, Mo.

Orders Revoked

BURLINGAME, David Albert, 1st Lieut., Minneapolis, William Beaumont General Hospital, El Paso, Texas.
DE YOUNG, George Marion, 1st Lieut., George, Iowa, Camp Murray, Wash.
GRIMES, Henry Burton, Major, Madelia, Minn., Fort Ord, Presidio of Monterey, Calif.
HAMILTON, Benjamin Charles, Major, Jefferson, Iowa, Camp Murray, Wash.
HAYMOND, Harold Everest, Captain, Perry, Iowa, Fort Meade, S. D.
ROBERTS, John Richard, 1st Lieut., Brentwood, Mo., William Beaumont General Hospital, El Paso, Texas.
ROSENFIELD, Abraham Benjamin, Captain, Hibbing, Minn., Army and Navy General Hospital, Hot Springs, Ark.
SAGI, Joseph Herman, 1st Lieut., Minneapolis, Fort Lewis, Wash.

CORRECTION

Lieutenant Hudgel.—First Lieut. Lawrence Eugene Hudgel, of North Platte, Neb., whose name was listed among the orders revoked in THE JOURNAL, February 15, page 600, writes that he had received two different orders and that it was only one of these which was revoked. Lieutenant Hudgel is still in active service and at present is serving at the Medical Replacement Center, Camp Grant, Ill.

EIGHTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Eighth Corps Area, which comprises the states of Colorado, Arizona, New Mexico, Oklahoma and Texas.

AISENSTADT, E. Albert, Lieut. Col., Picher, Okla., Station Hospital, Fort Sill, Okla.
BRADLEY, Frank L., 1st Lieut., Talihina, Okla., Station Hospital, Fort Sam Houston, Texas.
BRIDGES, James Payne, 1st Lieut., New York, Station Hospital, Fort Sam Houston, Texas.
COOKERLY, Van, Lieut. Col., Dallas, Texas, Station Hospital, Fort Sill, Okla.
DORNAK, Franklin K., Captain, Houston, Texas, 82d Field Artillery, Fort Bliss, Texas.
HODGES, Tom Wiley, 1st Lieut., Boston, Station Hospital, Fort Sam Houston, Texas.
HYDE, Theodore L., Captain, Wichita Falls, Texas, Fort Bliss, Texas.
JERMSTAD, Robert J., 1st Lieut., Fort Worth, Texas, Station Hospital, Fort Sam Houston, Texas.
MOSSBERGER, Joseph I., 1st Lieut., Denver, Station Hospital, Camp Wallace, Texas.
OXMAN, Albert C., 1st Lieut., Denver, Station Hospital, Fort Sam Houston, Texas.
PROSSER, Moorman P., 1st Lieut., Norman, Okla., Station Hospital, Fort Sill, Okla.
ROBERTS, Aaron L., Lieut. Col., Fort Worth, Texas, Station Hospital, Fort Sill, Okla.
SECREST, Pettus G., Jr., 1st Lieut., Boston, Station Hospital, Camp Bowie, Brownwood, Texas.
STRADER, Simon E., Lieut. Col., Oklahoma City, Station Hospital, Fort Sam Houston, Texas.
WADE, David Chapel, 1st Lieut., Galveston, Texas, Station Hospital, Fort Sam Houston, Texas.
WEISS, Joseph H., 1st Lieut., Denver, Station Hospital, Fort Sam Houston, Texas.
WHEELER, Norman O., 1st Lieut., Globe, Ariz., Station Hospital, Camp Barkley, Abilene, Texas.

Orders Revoked

HANNA, William Ray, 1st Lieut., Ladonia, Texas.
HESTAND, Haskell E., 1st Lieut., Odessa, Texas.
McMILLAN, George S., 1st Lieut., Hurley, N. M.
TRIPPET, Horace H., 1st Lieut., Waco, Texas.
WOODS, Haddon Benjamin, Captain, Refugio, Texas.

NINTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Ninth Corps Area, which comprises the states of Washington, Montana, Oregon, Nevada, Utah, California and Idaho.

BELL, Ralph M., 1st Lieut., Santa Maria, Calif., Antiaircraft Firing Center, Riverside, Calif.
BERKE, Samuel D., 1st Lieut., Indio, Calif., Camp Roberts, Nacimiento, Calif.
CASH, George C., 1st Lieut., Burns, Ore., Fort Lewis, Wash.
FIELDS, Irving A., 1st Lieut., Los Angeles, Camp San Luis Obispo, Calif.
GEEN, Robert S., Captain, Hollister, Calif., Camp Roberts, Nacimiento, Calif.
GLICKMAN, Milton, 1st Lieut., Los Angeles, Camp Haan, Riverside, Calif.
HENNING, Berthel H., Major, San Francisco, Camp Haan, Riverside, Calif.
LARRABEE, James F., 1st Lieut., Santa Clara, Calif., Nacimiento, Calif.
MAYTUM, Harry R., 1st Lieut., Merced, Calif., Fort McDowell, Calif.
MORRIS, George W., 1st Lieut., San Diego, Calif., Fort Ord, Calif.
SOLL, Sidney N., 1st Lieut., Los Angeles, Camp Roberts, Nacimiento, Calif.

Orders Revoked

HEATH, Richard S., 1st Lieut., Los Angeles.
LANDERS, Clyde H., 1st Lieut., Altadena, Calif.
NASH, Frank P., 1st Lieut., Townsend, Mont.

NAVAL RESERVE OFFICERS ON ACTIVE DUTY

The following medical officers of the U. S. Naval Reserve have reported for active duty since February 5:

ADAMS, Frank A., Lieut. (j. g.), M. C.-V. (G.) Bentleyville, Pa., Fleet Marine Force, San Diego, Calif.
ADAMS, Walter P., Lieut., M. C.-V. (S.), Norfolk, Va., Norfolk Naval Hospital, Portsmouth, Va.
ALLISON, Stanton T., Lieut. Comdr., M. C.-V. (S.), New York, Naval Hospital, Brooklyn.
ALVIS, Harry J., Lieut. (j. g.), M. C.-V. (G), Chicago, Fleet Marine Force, San Diego, Calif.
BENNETT, Everett E., Lieut. (j. g.), M. C.-V. (G.), Los Angeles, Fleet Marine Force, San Diego, Calif.
BILLION, Thomas J., Jr., Lieut. (j. g.), M. C.-V. (G.), Sioux Falls, S. D., Fleet Marine Force, San Diego, Calif.
BRADFORD, Fred E., Lieut. (j. g.), M. C.-V. (G.), Loma Linda, Calif., Fleet Marine Force, San Diego, Calif.
CHESBRO, Wayne P., Lieut. (j. g.), M. C.-V. (G.), Gilroy, Calif., 2d Marine Brigade, Fleet Marine Force, San Diego, Calif.
GARREY, Walter E., Lieut., M. C.-V. (S.), Boston, Naval Hospital, Chelsea, Mass.
GILMAN, Philip K., Jr., Lieut. (j. g.), M. C.-V. (G.), Watsonville, Calif., 2d Marine Brigade, Fleet Marine Force, San Diego, Calif.
GLEYSTEEN, Rodney R., Lieut. (j. g.), M. C.-V. (G.), Alton, Iowa, 2d Marine Brigade, Fleet Marine Force, San Diego, Calif.
GRATZ, Charles M., M. C.-V. (S.), New York, Naval Hospital, Brooklyn.
HAHNE, Leonard J., Lieut. (j. g.), M. C.-V. (G.), Savannah, Ga., Marine Recruiting Station, Savannah, Ga.
HANKINS, Franklyn D., Lieut. M. C.-V. (G.), Loveland, Colo., Fleet Marine Force, San Diego, Calif.
HYNES, Edward A., Lieut., M. C.-V. (S.), South Portland, Maine, Naval Hospital, Chelsea, Mass.
IWERSEN, Frank J., Lieut. (j. g.), M. C.-V. (G.), Omaha, Fleet Marine Force, San Diego, Calif.
KAHN, Bernard I., Lieut. (j. g.), M. C.-V. (G.), Ardmore, Okla., Aviation Base Group, Fleet Marine Force, San Diego, Calif.
LANE, Charles W., Lieut. Comdr., M. C.-V. (G.), Coronado, Calif., Naval Air Station, San Diego, Calif.
LIDE, Charles M., Lieut. (j. g.), M. C.-V. (G.), Columbia, S. C., Naval Hospital, Parris Island, S. C.
PENDERGRASS, Clayton I., Lieut. (j. g.), M. C.-V. (G.), Clovis, Calif., Fleet Marine Force, San Diego, Calif.
PERSON, Edward C., Lieut. (j. g.), M. C.-V. (G.), Wauneta, Neb., Fleet Marine Force, San Diego, Calif.
POPPEN, Mayo, Jr., Lieut. (j. g.), M. C.-V. (G.), Burr Oak, Kan., Fleet Marine Force, San Diego, Calif.
POWELL, Archie C., Lieut. (j. g.), M. C.-V. (G.), Omaha, Fleet Marine Force, San Diego, Calif.
SERRANO, Ernest E., Lieut. (j. g.), M. C.-V. (G.), Tampa, Fla., Marine Barracks, Quantico, Va.
SIMON, Julius, Lieut. (j. g.), M. C.-V. (G.), Los Angeles, Fleet Marine Force, San Diego, Calif.
STEIN, Ephraim, Lieut. (j. g.), M. C.-V. (G.), Brooklyn, Marine Barracks, Quantico, Va.
WOOD, Dennistoun, Jr., Lieut. (j. g.), M. C.-V. (G.), Palo Alto, Calif., Fleet Marine Force, San Diego, Calif.

NURSES APPOINTED FOR OVERSEAS SERVICE

Thirty-two nurses were named, January 25, by the American Red Cross to form the first contingent of a staff of 65 which will serve with the Harvard University hospital unit now being established in England by Dr. John E. Gordon, professor of preventive medicine and epidemiology at Harvard Medical School, Boston. Miss Mary Beard, national director of the Red Cross nursing service, who made the appointments, said that applications would be received from other nurses under 35 years of age who have graduate certificates and have had experience or training in the care of patients with communicable diseases.

WOMEN'S MEDICAL ASSOCIATION SENDS FUNDS TO ENGLAND

The American Women's Hospitals, which is the medical service committee of the American Medical Women's Association, has for the past eight months sent $1,000 a month to England for use wherever it is most needed, the New York *Times* reported January 26. An extra $1,000 was sent during the holidays through special Christmas donations. Distribution of the funds is handled by the Medical Women's Federation of Great Britain under the direction of Dame Janet Campbell, honorary secretary of the federation. Dr. Esther Clayson Pohl Lovejoy, New York, is director of the medical services and is assisted by the following committee: Drs. Helen I. Walbridge, Harriet F. Coffin and Inez A. Bentley, New York; Mabel M. Akin, Portland, Ore.; Louise Tayler Jones, McLean, Va.; Catherine Macfarlane, Philadelphia; Luvia M. Willard, Jamaica, N. Y.; Elizabeth Mason Hohl, Los Angeles, and Mathilda K. Wallin, Elmsford, N. Y. The committee is continuing its service in Greece, which has been functioning since 1917. Dr. Ruth A. Parmelee, Athens, in charge of the work there, has recently been made the only woman member of the administrative board of the Greek War Relief Committee.

GRADUATES OF FOREIGN MEDICAL SCHOOLS ELIGIBLE FOR COMMISSION IN MEDICAL DEPARTMENT RESERVE

The Adjutant General of the U. S. Army, Major General E. S. Adams, has issued regulations concerning the appointment of graduates of foreign medical schools in the medical department reserve. Graduates of foreign medical schools are considered eligible for appointment in the Medical Corps Reserve provided they meet the following requirements:

(*a*) Are citizens of the United States and can present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association.

(*b*) Have completed a medical course of at least four academic years.

(*c*) Have a license to practice medicine in the country in which their medical school is located.

(*d*) Have completed not less than one year's internship in a hospital acceptable to the Council on Medical Education and the Committee on Hospitals of the American Medical Association.

(*e*) Are eligible to take the examination given by the National Board of Medical Examiners.

(*f*) Have a license to practice medicine in the United States.

All applications for such commissions must be referred to the Surgeon General of the Army for approval.

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION ON TRIAL

THE TRIAL OF THE CASE OF THE UNITED STATES OF AMERICA

VS.

THE AMERICAN MEDICAL ASSOCIATION, A CORPORATION, THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, A CORPORATION, THE HARRIS COUNTY MEDICAL SOCIETY, AN ASSOCIATION, THE WASHINGTON ACADEMY OF SURGEONS, AN ASSOCIATION, ARTHUR CARLISLE CHRISTIE, COURSEN BAXTER CONKLIN, JAMES BAYARD GREGG CUSTIS, WILLIAM DICK CUTTER, MORRIS FISHBEIN, THOMAS ALLEN GROOVER (DECEASED), ROBERT ARTHUR HOOE, ROSCO GENUNG LELAND, THOMAS ERNEST MATTINGLY, LEON ALPHONSE MARTEL, FRANCIS XAVIER MCGOVERN, THOMAS EDWIN NEILL, EDWARD HIRAM REEDE, WILLIAM MERCER SPRIGG, WILLIAM JOSEPH STANTON, JOHN OGLE WARFIELD JR., OLIN WEST, PRENTISS WILSON, WILLIAM CREIGHTON WOODWARD, WALLACE MASON YATER, JOSEPH ROGERS YOUNG.

(Continued from page 770)

WEDNESDAY, FEBRUARY 12

TESTIMONY OF WILLIAM FREDERICK PENNIMAN (Resumed)

CROSS EXAMINATION—(RESUMED)

By Mr. Leahy:

Q.—Mr. Penniman, I think yesterday afternoon we had just about finished relative to the conversation that you had with Dr. Neill in his office on that Saturday afternoon. Do you recall?

A.—Yes.

Q.—What was that young lady's name again, Mr. Penniman?

A.—Mary Frances Stuart.

Q.—Was she a member of G. H. A.?

A.—She isn't a member in the sense—she was connected with the G. H. A. as laboratory—in charge of the laboratory.

. . . . . .

Q.—You knew, did you not, that the District Medical Society had a provision in the constitution with reference to the approval of contracts which any member of the Association had entered into with any group or industrial organization or what not?

A.—I have been so informed, yes.

Q.—You knew the terms of that, did you not, fairly well?

A.—Well, it had been presented to me I think by the chairman of that C. C. & I. M. Committee.

Q.—Was that Dr. Hooe?

A.—That's right.

Q.—And of course you knew somewhat about the District Medical Society, didn't you?

A.—Oh, yes.

Q.—Had you ever read its constitution and by-laws?

A.—No. I never did.

Q.—The only provision which you knew then in the by-laws was this one with reference to contracts needing approval?

A.—Yes. We had gotten it from various sources of course that these doctors could not be approved by the District Medical Society until they had approved Group Health Association.

Q.—Well, did you not think it was a question of approving the contract under which the doctors were to render services, that required approval?

A.—Well, I think we learned that subsequently, that they wanted to know if there was a definite contract that existed between the doctors and the Group Health Association.

Q.—Well, you knew it was that contract which the doctor who was a member of the Association was to render service under, that was the contract which required approval?

A.—That's right.

Q.—Did you ever submit that contract for approval to the District Medical Society?

A.—I didn't, but I think both Drs. Lee and Scandiffio did.

Q.—When?

A.—At the hearing.

Q.—Was there ever a written contract signed between Dr. Scandiffio and the Association, I mean, the Group Health, or Dr. Lee and the Group Health?

A.—I think there was a contract, sir, that was drawn up, and I think they signed it.

Q.—Are you sure of that?

A.—No, I am not sure. I know it was drawn up all right, and I know it was presented to the District Medical Society that night.

Q.—What night was that?

A.—It was either the first hearing or the second hearing.

Q.—Now, before you had entered into negotiations with Dr. Scandiffio and Dr. Lee, had you submitted the proposed contract to the District Medical Society for approval?

A.—Well, now, I would like to get that clear. I made no contract with either Dr. Lee or Dr. Scandiffio. That was something we left entirely to the Medical Director. He was the one who made the negotiations between these two.

Q.—But the Medical Director had no authority to employ doctors without the approval of the Board of Trustees, did he?

A.—He had authority to investigate their qualifications, and then present the terms to the Board.

Q.—And it was then the Board which employed the doctor, and not the Director?

A.—No. I think he presented the question of the salary that was to be paid to them and the Board, of course, had to consider that within its budget.

Q.—Let me ask you this, Mr. Penniman, did the Medical Director of Group Health Association have authority to employ a doctor without the approval of the Board of Trustees?

A.—He had the authority to employ them as to their qualifications but not as to the salary.

Q.—In other words, no doctor could work for G. H. A. until the Board of Trustees authorized that employment?

A.—The salary, yes.

Q.—Now, what the Medical Director did was make an investigation of the qualifications. Isn't that true?

A.—That's right.

Q.—Is that because you felt that a lay board could not investigate the professional qualifications of a doctor?

A.—I would think that is true, yes. They left that to the Medical Director.

Q.—Isn't that exactly what you and Dr. Neill were discussing that day when Dr. Neill said to you you could take the Supreme Court, all the courts, and the members of Congress, but they couldn't judge a doctor?

A.—I think so.

Q.—Meaning that lay people could not determine the qualifications of a doctor?

A.—That's right. There are a lot of new people coming to Washington that don't know the qualifications of a doctor here. How can they select a doctor, then?

Q.—Doctor, did you know that the Executive Committee of the District Medical Society was in doubt as to how to act in this matter of doctors working for the G. H. A.?

A.—That they were in doubt?

Q.—Yes.

A.—Oh, I think we had ample evidence of that, Mr. Leahy. You see, we had been working on this since January, and we had ample evidence that they were not cooperative.

Q.—What do you mean when you say not cooperative? Will you kindly restrain your answer to the question?

A.—The question you asked me was whether they were doubtful as to the operation.

Q.—No. What their conduct should be with reference to members of the Association whom you were seeking to employ.

A.—Well, I don't know as I could answer that just the way you want me to answer it.

Q.—I want the fact.

A.—I think the first doubt of doctors came to us from Dr. Glen R. Jones, as far back as March. We knew pretty well.

Q.—Let me refresh your recollection.

Mr. Lewin:—Let him finish his answer.

Mr. Leahy:—I think he has finished his answer.

By Mr. Leahy:

Q.—You have read over all those notes of that meeting that were there taken down? (indicating).

A.—I think so, sir.

Q.—Do you recall Dr. Macatee's talk to you at that meeting?

A.—Is this the hearing in the board room?

Q.—Yes. You have read that over, haven't you?

A.—No, I have not. I heard it that night. I meant the hearing at the District Medical Society.

Q.—You presided at the meeting, didn't you?

A.—I did, sir.

Q.—And in opening the meeting you had this to say, didn't you, that your committee was invited to appear before a group of the members of the Medical Society that they might learn more about the aims and objectives of this effort of yours in Group Hospitalization?

A.—Yes.

Q.—Then you said:

"We met with the committee that was selected and a good many questions were asked and a good many answers were given."

You said that, didn't you?

A.—Yes.

Q.—

"We hope we gave the answer they wanted. We endeavored to do so. We had nothing to withhold. We put all the cards on the table and endeavored to answer every question that was asked us in which we felt they would receive any benefit."

Did you make that statement?

A.—I think so. That is the transcript of the meeting?

Q.—Yes. Did you put all the cards on the table?

A.—I think we did.

Q.—Put the contract on the table, too, did you, that we discussed yesterday?

A.—Which contract, with the Federal Home Loan Bank Board?

Q.—Yes.

A.—No, we didn't do that.

Q.—You had nothing to withhold but you withheld that contract, didn't you?

THE COURT:—He said he did.

By Mr. Leahy:

Q.—All right. Now, did Dr. Macatee say this, that he should like at the outset to express appreciation of the attendance of Mr. Penniman and the gentlemen of your organization at the Medical Society some time ago; and did he further express his appreciation at the full meeting of your Board of Trustees down there that evening?

A.—Does it say so in that? (indicating).

Q.—Yes.

A.—Yes. I think that is correct.

Q.—Now, on this question about the lack of cooperation which you just mentioned in your previous answer, did Dr. Macatee say this to the entire Board that night, your board meeting:

"I think I may say for the Medical Society that we are in sympathy with the proposition of spreading the costs of illness for individuals over a large group so that the disasters that come to family budgets may be avoided by that group protection. We feel that if some method could be devised by which these could be accomplished economically, and I use the word 'economically' in the sense of not only doing it within the means of people of moderate income but also from the view of keeping the project solvent, that if some such method could be worked out, it would have tremendous social value."

Did he say that?

A.—I think he did.

Q.—Is that right?

A.—I think so. I don't remember his words, but if it is in the transcript, I think that transcript is correct.

Q.—But you don't remember Dr. Macatee saying that the District Medical Society was in sympathy with its aims or objects which you presented as the aim and object of G. H. A.?

A.—I couldn't recall just exactly what he said, Mr. Leahy. He gave a very interesting talk for some thirty minutes. I couldn't remember the details, but I think the transcript there is correctly taken, and if it is in that, I think he said that.

Q.—Just a moment. Didn't you know, then, as early as June when you met the Medical Society's Board, that the Medical Society and you, as to the objectives which you both were seeking, were in harmony and in sympathy?

A.—Well, the objective was there, yes. The method wasn't entirely there.

Q.—Now, what was said, according to your recollection, which was developed at either one or two, or both of those meetings, which the Medical Society of the District of Columbia objected to, according to those who spoke for its Executive Committee, as to the method which you were pursuing?

A.—As I recall, the main objection that had been registered was the fact that these doctors were working on a contract, those that were getting a salary for their services.

That is one of the main objections. I think the proposals, as near as I can recall, were that they were willing to go along with us on some basis whereby we could have membership in an organization and let the doctors take care of the patients.

By Mr. Lewin:

Q.—Let what doctors?

A.—The local doctors, members of the Medical Society; and not have any salaried doctors on the staff at all.

By Mr. Leahy:

Q.—Now, was it the fact the doctors were working on a contract, on a salary, or was it the fact that the District Medical Society wanted to know what sort of a contract you wanted their members to work under?

A.—No, I think it was because they were working under a contract which they had a great deal of contention about, the doctors getting a salary.

Q.—Do you remember Mr. Macatee then saying this, after you opened this meeting in July:

"Now, Mr. Penniman's remarks, however, leave us somewhat in an embarrassing situation, for the reason that we are not yet in a position to know how we may cooperate helpfully to the organization."

Do you remember when he said that?

A.—I think he did.

Q.—Was he referring then to the fact that you had not submitted to him or to the Medical Society or to the Executive Committee any of the information which Dr. McGovern had asked, as late as July 15th, in his letter?

A.—I can only assume that that is what he was referring to, because in our meeting with the District Medical Society we discussed it very openly, and as I mentioned in my opening remarks, we laid our cards on the table and we withheld nothing so far as information was concerned with what we were attempting to do.

We answered their questions and we gave them our ideas.

Q.—Isn't it a fact that you, yourself, stated that you did not put all the cards on the table and that you did not answer all of the questions but you answered the questions which you felt they would receive any benefit from?

A.—Well, I don't know. We answered their questions. I don't think at the meeting we denied an answer to any question propounded by the doctors that we had the answer for.

Q.—Now, didn't Dr. Macatee also explain to you the reasons why the Executive Committee of the District of Columbia found itself in an embarrassing situation, and didn't he tell you there that "those reasons are bound up in a number of considerations which are very clear and familiar to us as medical men, growing out of the difficulty of finding acceptable contracts by which medical men might lend themselves to plans of this sort without incurring certain infractions of the principles of medical ethics by which we are bound"? Do you remember that statement?

A.—I think so.

Q.—Then did Dr. Macatee discuss with you the articles of incorporation, which you told him were on record, and which he could find?

A.—Yes.

Q.—And did he have anything to say to you there as to what the District Medical Society would like to do to help and cooperate with you but couldn't in the doubt in which they were with reference to the status of your organization?

A.—He may have, sir. I don't recall it.

Q.—Don't you remember what he said on that point?

A.—No, I can't remember.

Q.—See if I can refresh your recollection, Mr. Penniman.

A.—Good.

Q.—

"The first thing that occurs to us is this: that yours is a corporation which is intended to provide for the service of physicians, and other medical attendants, of any and all kinds of medical, surgical and hospital treatment to the members."

Do you remember that opening up the discussion?

A.—Yes. Was he quoting from the charter?

Q.—He was just giving his review of what he said the charter was.

A.—Well, then, he did have a copy of the charter.

Q.—In looking over your articles of incorporation, you had already told him where he could get it?

A.—And he had it.

Q.—"I find among the objects and purposes for which this corporation is formed are the following." Now, didn't he say this:

"One of the things we are quite uncertain about and would like to have information about, if you have it, is that in many of the states of the Union, the courts have found that a corporation cannot practice medicine, for the reason that a corporation cannot be licensed to practice medicine, and for that reason, although we realize that in the District of Columbia, that question has not arisen hitherto, and there have been no judicial decisions on it, such question might arise and the Medical Society would therefore be very uncertain what it could advise its members to do with respect to cooperation with such an organization.

"So far as the District of Columbia, therefore, on that ground at any rate, your organization is, in the words of Secretary Perkins, 'Its legality has not yet been determined.' "

Do you remember that?

A.—Yes.

Q.—So that at that time that was one of the reasons which Dr. Macatee said to you that he would like additional information on, the assistance of your organization, on the question of whether you were legally existing at that time?

A.—That's right. And that brings back to my mind the reasons, and from Dr. Macatee's statement there, that the Board of Trustees felt that their request for the charter and for the contract and the by-laws was not based on the desire to be in cooperation with us, but it was to get information to test the legality of Group Health Association.

Q.—Well, the articles of incorporation were of record, weren't they?

A.—Yes.

Q.—Has he said anything yet about by-laws?

A.—No. But you talked about it yesterday. You had them.

Q.—You said he had them.

. . . . . .

By Mr. Leahy:

Q.—Did you ever supply Dr. Macatee with any information at all to satisfy his uncertainty with reference to how he should advise the members of the District Medical Society?

A.—Well, aren't we going back to the same question?

Q.—Same question, on the question of legality.

A.—I have already answered that he wanted the contract and the by-laws.

Q.—I am not asking you about the contract and the by-laws.

A.—What are you asking me about?

Q.—I am asking you now in the information he asked you as late as July 26th, could you give him any information so the members of the Society would be able to advise its members what to do?

A.—Would you read again what he asked for?

Q.—

"One of the things that we are quite uncertain about and we should like to have information about, if you have it, is that in many of the States of the Union, the courts have found that a corporation cannot practice medicine for the reason that a corporation cannot be licensed to practice medicine and for that reason, although we realize that in the District of Columbia that question has not arisen hitherto and there have been no judicial decisions upon it, such question might arise and the Medical Society would therefore be very uncertain what it could advise its members to do with respect to cooperation with such an organization. So far as the District of Columbia, therefore, on that ground at any rate, your organization is, in the words of Secretary Perkins, 'Its legality has not yet been determined.' "

Now, did you, as president of Group Health Association, extend to the District Medical Society, any information upon that question?

A.—On the legality?

Q.—Yes.

A.—No. There wasn't any question in our minds about it.

Q.—Well, did you answer the question, or did you in any way attempt to assist Dr. Macatee, to convince him that what you thought about it was right?

A.—Oh, I think so. I think we went into a great deal of detail about the operation of Stanocola and the Civic Medical in Chicago and the Ross-Loos in Los Angeles. I think we went into all those details very clearly.

Q.—I am not asking you about Civic Medical and Ross-Loos and Stanocola, I am asking you about your own organization Group Health. Did you supply any information on that point which had caused uncertainty in the minds of those gentlemen?

A.—That point had not arisen with us at all. We had no doubt at that time about it.

Q.—Now, then, did he discuss with you further another reason why they were uncertain about the matter?

"Now, then, one of the other, or at least not one of the others, but the principal difficulty that we are facing at the present time also is the knowledge that certain members of the Medical Society have already been approached with a view to serving your organization in a medical capacity, a professional capacity. There is in the Constitution of the Medical Society of the District of Columbia a provision which is mandatory upon all of the members of the Medical Society that contracts to render medical service must be approved by the appropriate committee of the Medical Society, taking into consideration the objects of the contract, the terms of the contract, and whether those terms and objects are in accord with the principles of medical ethics."

Do you remember his asking you about that?

A.—I do.

Q.—Does he say at any time in that meeting, to your knowledge, that he ever knew the terms or objects of the contract under which members of the Medical Society had been approached with a view to rendering professional services to your organization?

A.—No. I think he said a contract would be necessary to be submitted.

Q.—Now, then, they discussed—we won't go into that because it would take too much time—they discussed principles of medical ethics which Dr. Macatee brought to your mind specifically, did he not?

A.—Yes.

Q.—And those principles which he said caused him doubt; among which were

"solicitation of patients, directly or indirectly; where there is underbidding to secure a contract; when the compensation is inadequate to assure good medical service; when there is interference with reasonable competition in the community; when free choice of a physician is prevented; when the conditions of employment make it impossible to render adequate service to the patient; when the contract, because of any of its provisions or practices, results are contrary to sound public policy"

Did you all discuss those matters that night?

A.—I think we did.

Q.—And you knew that night, then, that the contract which they were asking to see was one which they would want to know met the requirements which I have just put to you?

A.—Yes.

Q.—Now, did he further bring to your attention:

"The other thing that has occurred to us is that seventh item in the criteria for the ethical character of a contract with a corporation, and that has to do with whether it is consistent with sound public policy. We conceive ourselves to be responsible in a measure for the welfare of the citizens of the jurisdiction in which we practice and we wonder whether the plan which has been so carefully worked out for your organization, whether it will actually perform for the members who join it, just the function that you design for it. We know in our contacts a good deal about human nature; we know how people when they have trivial illnesses most any doctor who is licensed and who can be found on the corner will do, but we also know that when serious illness, when complicated and difficult cases arise, and those are the cases which strike heavily upon the budgets of families, that nothing but the best will do."

Do you remember a discussion on that?

A.—Very well.

Q.—And do you remember his asking you what would happen if an epidemic broke out and how you would take care of your members?

A.—Yes.

Q.—And what provision would be made?

A.—Yes.

Q.—And did he ask you whether there were funds or surplus funds available to take care of that situation?

A.—Yes. What we would do generally in an epidemic.

Q.—Call on other doctors in the Medical Society. Is that right?

A.—The answer is in there.

Q.—Yes.

A.—If we got in a predicament of that kind we would certainly again solicit the aid of the members of the District Medical Society to help us.

Q.—Do you remember whether any other doctors spoke there that night further?

A.—Yes, I think Dr. Groover spoke.

Q.—And did Dr. Macatee ask if some of you gentlemen wouldn't talk to him there and discuss the things which he had said?

A.—I don't remember that.

Q.—Do you remember his saying:

"I wonder if some of the members of the committee have some questions to ask or suggestions to make for the benefit of this Board of Trustees. Some of the things I have said may need elaboration."

A.—He was speaking of his own committee.

Q.—"Do you think of anything I have omitted," as he turned to Dr. Groover.

Do you remember Dr. Groover talked?

A.—Yes. I remember the substance of it.

Q.—Do you remember the discussion was with reference to the aims and purposes of the organization as you had described them?

A.—I cannot say that I remember that in detail. I remember Dr. Groover there saying that wherever clinics of this type had been organized in foreign countries, in Cuba, Germany, and elsewhere, that there had been a depreciation in medical service and things of that kind. There was quite a lecture on that.

Q.—Do you remember Dr. Groover saying this:

"In the first place, before I say anything, let me make it plain that I have no personal interest in what this group does for the very simple reason that I have practiced medicine now some 40 (30) years and my days of practice are nearing an end in five years or six years, so it doesn't make any difference to me personally what you do or what you don't do."

A.—Right.

"To some extent, that is true to some of my colleagues who are with me. I think when we boil the whole thing down we will find that the fundamental thing that concerns the medical profession and actuates it to look askance at such developments as this, is the consideration as to the effect it may have on the quality of medical care, and I believe that the medical profession as a whole would be perfectly willing to waive almost any other consideration if they could be convinced that it would not tend to the deterioration of the quality of medical cure. The medical profession generally believes that. Now, they may be wrong, but they are overwhelmingly of that opinion. It is difficult to convince a layman of that, I know, and perhaps to do so would be an almost futile undertaking. I will call your attention to just one thing that will give you something to think about: When I graduated in medicine in 1898, Germany was a leader in medical science, perhaps next would come France, next would come England, and somewhere way down at the bottom of the list, came the United States. We were backward. Well, now, it is at least significant that at about that time these social schemes began to be introduced into Germany first under Bismarck as a purely political movement, and later on they have spread. Now what has happened. This is not proof, I know, but it is suggestive. Is Germany any longer the leader in medical science? No, it is not. Is France? No, it is not. Is England? No, it is not. Leadership has passed from Europe where these various social schemes have been tried out, to the good old U. S. A. Now that at least is significant and I think that while we must be coming up the scale, they have to some extent gone down. America no longer goes to Germany for its postgraduate education. As a matter of fact, many Europeans are now coming to the United States for training, and I mention that one thing to indicate that the thing that concerns the doctor is how these different things are going to affect the quality of medical care in the United States and if we don't have a broad enough vision to sustain and to constantly increase the quality of medical care, your economic considerations are worse than failures and I think you should give careful consideration as to this for that is the thing in the last analysis that concerns the medical profession, as to how and what effect it is going to have on the quality of medical care. Doctors who have studied it feel that it will be bad. Maybe they are wrong, but there is certainly sufficient evidence to justify that opinion. I think that is about all I have to say."

Do you remember that statement?

A.—Yes, sir.

Mr. Lewin:—Now, just a moment. I would like to make a suggestion to your Honor, if you will excuse me.

Mr. Leahy:—Yes, sir.

Mr. Lewin:—We offered this transcript in evidence yesterday, and your Honor held it under advisement. I think it is perfectly competent evidence.

THE COURT:—I will hold it is in evidence now, and either side can read any part.

Mr. Lewin:—Your Honor, I hadn't quite finished my suggestion. I think if you would bear this sort of procedure in mind in offering proof, I think we are entitled to this consideration. This was offered by us and should be considered as a whole, that statement. It shouldn't be read in piecemeal fashion such as this by reading paragraph after paragraph and asking him if he remembers.

THE COURT:—I will tell you what I will do if you wish. If you wish, I will suspend now the cross examination and you may read it. Or, if you prefer, after Mr. Leahy gets through you may read it.

Mr. Lewin:—I think it would take time.

THE COURT:—Suppose you gentlemen take a rest.

Mr. Lewin:—May Mr. Penniman step down?

THE COURT:—Yes. You may be a little more comfortable if you step down. You may go out, if you prefer.

The Witness:—Thank you.

(Mr. Lewin read the report to the jury repeating to where Mr. Leahy had discontinued, including and then going on:)

Dr. Verbrycke:—Mr. Penniman, ladies and gentlemen, I hadn't intended to say anything, but I think there are several points. First, most of you are laymen and I think perhaps we might bring out a little about what medical ethics are. The system of ethics was not devised for the protection of the doctor or his interests, but in every case from the time of Hippocrates down, has been made for the good of the patient. I think that you will know, that you will realize in the long run the doctor is not selfish by reason of our emphasizing two points: First, if a doctor ever invents some wonderful discovery of some sort, he is not allowed by medical ethics to patent it, it goes for the good of humanity, and, second, the doctor is unceasingly developing preventive measures, which takes money right out of his own pocket. We now have the tests for Scarlet Fever, Diphtheria, etc. where they can be prevented. I think those two examples will show that we are not speaking from a selfish standpoint, but we do have the good of the patient at heart. I am sure that all of us appreciate the high ideals and aims of this organization, and we are heartily with you in that. The only thing is the method of achieving that and I don't think there is such a very big difference between what the doctors can agree to and what you wish. I think there are just two small points but that the first and main consideration lies more upon the sixth one of those principles of medical ethics. I think it is the sixth, and that is that the patient should have always a free choice of physicians. Now to bring that down to a practice, to your own group from a practical standpoint, I have no doubt that you can get good doctors on your staff as full time salaried doctors. You can't have the best. There are two or three reasons why you can't have the best. One, there is no such thing as the best in a broad classification. In other words, we may have fifty good Ear, Eye, Nose and Throat Specialists in Washington and maybe only one or two who are capable of taking an open safety pin out of a lung. We may have an excellent surgeon when it comes to certain things like Thyroid operations. He may be way below the best when it comes to . . . There can't be any best. Medicine is so specialized that certain men stand out in one little tiny thing, perhaps in which they are best.

In the second place, because unless an organization has free choice of physicians the best doctor is not permitted. All members of the American Medical Association are not permitted to have a part with it. Now, doctors are very jealous of the privilege of belonging to the American Medical Association because practically all good doctors in the United States are members and they wouldn't give up the prestige to accept a salaried position if they knew it meant the likelihood of their not being able longer to continue their membership in the American Medical Association, and it is mandatory and absolutely compulsory upon us. Unless the American Medical Association would see fit to change them, no member of our Society could have anything to do with an organization which would not permit free choice of physicians.

From another standpoint the income of good doctors is higher than any salary you could afford to give. That is not accomplished by big fees. You aim to spread the cost of medical fees over many. The doctors in the higher income brackets spread many fees over many patients, but the best doctor would not accept a salaried position for anything you could possibly pay.

That brings you down to two practical points. I see no reason why your organization should not instead of having salaried—I am speaking personally now, not for the Medical Society. I see no reason why you couldn't have free choice of physicians, that is having every member of the Medical Society who would agree to live up to certain fee tables, to have the choice of being chosen by the patients, to have only one salaried man in your organization, the Director, who would serve not in a medical capacity, but in an administrative capacity entirely, and that sort of proposition would entail something such as Dr. MacAtee suggested, whereby the patients pay a little bit of the cost. Of course, the Medical Director would have to have a certain amount of supervision as where any patient was running up too large a bill, or if there were some unscrupulous doctor running bills up too large but with those two things in mind, I feel pretty certain that the Medical Society and this organization could get together and be very helpful to each other; so I want to leave, from my standpoint, that one thought, to see whether instead of having salaried personnel, you couldn't find it possible to allow the patient the free choice of physicians, which is the big stumbling block as far as the doctors are concerned.

Mr. Russell:—Expresses appreciation for the doctors coming here.

Mr. Loomis:—I would like to inquire whether the committee has given consideration to the fact that there are other group associations in existence whose history over a period of time and through a fairly large clientele has been highly commendable and helpful and whether that fact, taken with the fact that in our own organization we are a voluntary association operating through the corporation patterning our work after the successful operation of a very large number of these group associations; whether that has been taken into account and the success of those organizations recognized, or whether you have given consideration to the development of those associations, that have done such capable work, that other associations are steadily growing up, of which ours is not a direct pattern, but certainly taking a leaf out of their experience and being carefully developed along lines which are not new to us or new in the field, but have proven over a sufficiently long time useful service to groups similar to ours. Has the committee given consideration to that?

Dr. Macatee:—I might say that the committee has given consideration to these groups which have grown up throughout the country, the most notable of which is the Endicott-Johnson Corporation in New York. There are others, however, and we have felt that there were conditions surrounding those groups and organizations which set them aside particularly as specially favorably placed to succeed. We notice in your Articles of Incorporation that, what shall I say, that the benefits of your purpose is available for any employee of the Federal Government wherever he may be placed unless his employment happens to be in the Army or Navy where medical care is part of his emoluments; and we have felt that we should have to be very slow before we gave our endorsement to a matter of this sort because we must recognize that, potentially at any rate, this organization by virtue of its Articles of Incorporation might involve about one third of the population of the District of Columbia and, therefore, the question of public policy and its effect upon the general medical care of the whole community would have to have our careful consideration for the reason that, suppose this organization should achieve at least the theoretical possibility, that would leave the care of the rest of the population of the District of Columbia in the hands of the medical profession as it exists, with the total obligation for the indigent, the unemployed, the dispensary and staff work of the hospitals, and leaving the very large colored population to the colored profession in whose hands that practice largely rests, that, of course, would have a profound effect upon the whole public economy of the District of Columbia and we would need to give careful consideration of it.

Mr. Russell:—(Raised the question, as the doctor had said, if we get real sick, would we not go looking for an outside doctor?)

Dr. Macatee:—You will, and I think it will rack your organization.

Mr. Kirkpatrick:—You mentioned in the opening part of your remarks, I understood you to say that, you stated from the premise that this corporation started to practice medicine. One of the purposes of this organization is to provide medical attention for those who—

Dr. Macatee:—May I interrupt to say that I did not state that as a premise, but as one of the things we would have to examine carefully before we can give approval and advice (cooperation) to the corporation.

Mr. Russell:—We expect to avoid that situation.

Mr. Kirkpatrick:—One of the purposes of this organization is to provide medical attention for those who don't receive it because they can't afford it.

Dr. MacAtee:—I would say I don't know that that would enter into the situation if it came to the question of judicial interpretation whether it is a corporation practicing medicine, or not, I don't know; I am not a lawyer, but I would say I don't believe that question would arise. It would arise entirely from the fact that a corporation is in fact a person and a person must be licensed, and it would depend upon whether the corporation is entitled to practice medicine. The Medical Society takes an entirely different view of the situation for the reason there is no, in our opinion, there is no person in the District of Columbia, Federal employee or otherwise, who can't get medical attention when he needs it, and if he has no money and no prospects of having money, he can get it under municipal auspices. If he is short of money and by reason of illness is unable to pay in cash, the cost of his medical care, the medical and dental professions have already set up a mechanism by which he may budget the cost of his care over a period of five, six, seven, eight or nine months, the cost of which is defrayed by the doctor, dentist or hospital involved.

Mr. Kirkpatrick:—The cost would be on a higher scale than we could provide the same service for.

Dr. Macatee:—I think you will find that the scale of fee for people in that level will always be scaled down to their level. When it becomes necessary for them to apply to . I am speaking by and large and not with reference to an occasional fee. When a doctor by bad judgment or by occasionally may oppress someone, but when a patient is in an economic level where he has to apply for relief of that sort, the scale of costs immediately goes down to his own level. Of course, if he can't meet the cost on a reasonable basis of compensation for services rendered, then the resources of the Community Chest come into play on his behalf and he may receive his services gratuitously and at the hands of the medical profession who compose those staffs entirely gratuitously. I want to bring out for the benefit of all the laymen present, because there is a singular lack of information on that point, that the staffs of the hospitals who attend any patient in the wards of the hospitals who receive any help from the Community Chest, do so without any compensation from the patient or from the institution.

Dr. Groover:—May I say something regarding one or two points that have been raised. Doctors generally extend unlimited credit; they are the only group of people in the country that I know of who do extend unlimited credit. Anybody can come into my office tomorrow, it has been so and I am sure it is so with all of these doctors here; their credit rating is never looked up before we treat them. We treat them first and do the best we can for them, and the question of getting paid for it is the last thing that is considered. Now, a business man would consider that rotten, and maybe it is. We know perfectly well that doing business on that basis results in a very considerable loss and we know perfectly well from experience, for instance, under the Workmen's Compensation, which by the way we don't consider approved, but we practice under the Workmen's Compensation. We know by experience we can attend groups of individuals where we know there will be no loss in collections, about 25 per cent cheaper than we can under the present scheme. Is that clear? The medical profession extends unlimited credit and for that reason there is necessarily a large loss in collection. They never ask the patients who may come in the office , but few of them I dare say are wise enough to know better. I should say at least 90 per cent of the doctors practicing in the District of Columbia do. If you go into his office or send for him to go to your home to see you, he will not raise the question of money. He will do what he can for you and run the risk of getting paid when he can. It is true that under such a system, good or bad, there is a considerable loss in collections. Certainly doctors can't get it when the patients haven't got it. That is obvious. He might as well stop trying. I have stacks of hundreds of files in my office now, and it is perfectly true that if we deal with a group, making a bargain with a group, we can do it about 25 per cent cheaper.

Mr. Zimmerman:—Is it true that about 60 per cent of doctors' accounts are collectible? The national average about 40 per cent of their accounts are never paid?

Dr. Groover:—I presume there is some evidence on that point, but I don't know and I doubt if there are any very accurate figures on it. It varies so in different types of practice. I will give you something in my own experience if that will be helpful. Our losses are about 25 per cent. Strange as it may seem, most of those losses are because they deal with a different type of individuals and I think we are perhaps slightly high.

Mr. Zimmerman:—Doctor, do you feel—I am wondering if you feel that a cooperative arrangement to make certain that the doctors will be paid for what they do, thereby stabilizing the income of the doctors who do the work, if that would be desirable to the medical profession. Etc. Etc.

Dr. Groover:—I think it would be exceedingly unfortunate to stabilize the income of the medical profession, because there is just as much difference in the qualifications of doctors as there is in the qualifications of stenographers. Some of them can do it and some of them are rotten . . . I may pay one stenographer $200 a month. I actually have another who isn't worth $50 . . . would be unfortunate to stabilize the pay of doctors.

Mr. Kirkpatrick:—Dr. MacAtee, I think you stated that group practice in foreign countries has tended to deteriorate the quality of medical (?). Is there any evidence in this country so far as it has gone?

Dr. Groover:—I should say none, for really it hasn't gone very far.

Dr. Verbrycke:—The most successful, apparently, project of the kind is a privately owned concern, the . Of course, all of the different cooperatives vary a little bit. The Endicott-Johnson is an industrial concern. There are a few which have been sponsored by doctors out in the far west, in Washington and Oregon. One sponsored by the Medical Society of County, Georgia. They are apparently having good results, except that they are having troubles with their finances. Their bills are behind and they have not been able to keep up.

Mr. Russell:—How old is that?

Dr. Verbrycke:—That's about a year or a year and a half old.

They are so few and they are so different, we don't have a great deal to go on. I would like to ask Mr. Zimmerman, 'Did you not mean by stabilizing the doctors' income not so much putting it on a fixed basis as eliminating the loss, stabilizing more than equalizing, and that meant, I think, on Dr. Groover's assertion that we could practice medicine at a 25 per cent less cost than we do if we were assured of our income. There is no question but that we could do that. There is no question but that the members of the Medical Society would probably be for such an organization if the patient had free choice of physicians.

Mr. Zimmerman:—We would like to look on this arrangement as an arrangement which provides through cooperation the possibility of a method of payment and from what you have said this evening I sense that you are in sympathy with that aspect. I am interested in what you say about the free choice of doctors. I think it would be helpful if we explore that a little further together. Do you have the notion, tell me, that with a group of employees whose incomes average—that is, 60 per cent of the incomes are $1,800 or less, who must provide shelter, clothing, food, school books and that families have to purchase, do you have any notion that that group of people have a free choice of doctors now in our present arrangement?

Dr. Verbrycke:—Emphatically, I do. and they could do even better if losses were cut out.

Mr. Zimmerman:—I don't think they have a free choice of doctors.

Dr. Verbrycke:—I doubt if the patients who come to me have average incomes of over $1,800, and I am supposed to be a doctor in the higher brackets.

Dr. Groover:—Same here.

Mr. Russell:—The average income in Washington is $1,500 to $.....

Dr. Macatee:—I would like to ask Mr. Zimmerman . . . whether he means by that an income of $1,800 per year automatically limits people with such an income in their choice of physician to the poorer class of physician. Is that what you mean?

Mr. Zimmerman:—My point is that most of these people have no financial reserve, have no savings and can't afford to have the annual periodic physical examination and for that reason they only employ the services of a doctor when they are in trouble, sick and think they are going to die, and they are going to have to select their doctor from the group for whose services they can pay. I don't think they have a free choice of doctors in the sense that you gentlemen have been discussing it tonight.

Dr. Conklin:—I would like to say for the information of the ladies and gentlemen present that the Medical Society of the District of Columbia took cognizance of the rather desperate situation that most everybody was in, including the physicians themselves; the financial outlook was not good. In the midst of that the Medical Dental Service scheme was worked out. I believe that most of you are familiar with it. We have certainly tried to publicize it. It means that the whole fee and the whole expense may be definitely budgeted; the doctor's fee, the hospital fee, the laboratory fee, that is money that would go to , would all be lumped right in one sum and that is collected through this Medical Dental Service Bureau at 8th and I. Ten per cent is retained to maintain the overhead and we may say that the Medical Dental Service Bureau has just gotten by financially, and that is all we expected it to do. We have taken care of a great number of people and I am sure that Mr. Zimmerman's question can be answered right now by saying that if we will take Jones down here on Section Street, wanting to have his tonsils taken out, and he picked one of our Nose and Throat men who has a large practice. He would go down to the Medical Dental Service Bureau and say 'I want Dr. ———— to take my tonsils out. I haven't but so much income.' Right down there a man by the name of Trainor takes out a pencil and paper and finds out what his income is, how it is budgeted, how much goes for clothing, shelter, etc. He finds that the man has left about $5.00 or $10.00 which he might possibly put on a medical bill. This has actually happened. It is not theoretical or hypothetical. They say I don't see how I am going to do it. He charges $75 or $50 to take tonsils out and this is all I have.

That bureau has called up doctors innumerable times and says here is someone who wants his tonsils out. We have gone over his income and he can't possibly pay more than $35 to take his tonsils out. Will you accept it? Those cases have been accepted and they have been accepted by outstanding Nose and Throat men. The same thing has been done for appendectomy. Those fees have been adjusted.

Now, then, furthermore, I would like to say there was a great number of people that were unable to pay, certainly unable to pay $3 for a house visit, they might possibly pay $1 for a house visit. They might possibly pay $25 for a obstetrical situation. I believe I was really proud of the local medical profession and its reaction to the attempt to get a panel of doctors who would be willing to accept $1 for a house call, $25 for an obstetrical case and other fees in proportion. We have that list in the Medical Society Office; on that list are men who you would be actually surprised to see there; Obstetricians who would be willing to go out and take cases for $25. The names are there. They signed up. We had this panel. The only requirement—they would have to be certified by the Medical Dental Service Bureau as being unable to pay more than $25 for an obstetrical and $25 for appendectomy and I think that very well answers what Mr. Zimmerman had in mind, certainly as far as the effort made by the local medical profession, to take care of those individuals who would not have sufficient funds.

As far as the periodic health examination is concerned, you may or may not remember: In about 1930 the American Medical Association started its insistence that more periodic health examinations be made. The slogan was established 'Get a physical examination on your birthday annually.' Not one single word was said about how much to pay for this examination. The thing was to have the physical examinations. I want to say that we had public meetings; the Medical Society of the District of Columbia sent speakers to various organizations to sell this idea and I also want to add most emphatically that these annual physical examinations brought the doctor from zero up to $10 say, and I am just as sure as I set here, that if these individuals about whom you are speaking had the idea sold to them about a physical examination, they could go out tomorrow to get those physical examinations without the necessity of putting any money down. ————. I believe it is more the lack of willingness on the part of the individual or lack of knowledge that those things haven't been done more; that is one of the main things. They are going to take care of the individual while he is well. I just believe that sort of thing can be taken care of and I believe that this Medical Dental Service Bureau has answered many of the economic problems as far as medicine is concerned. If any of you haven't been down there, I would suggest that you just drop in and say you have an income of $1,800 and that you want to have an appendectomy by a surgeon. Go down there and find out what happens to satisfy yourself.

Dr. Groover:—I want to say one more word, in regard to periodic examinations. I think the reason that periodic examinations are sought after is that the American Medical Association had given such a boost and because the doctor can't realize . . . If we accept the care of infants and pregnant women, the periodic examinations of infants and pregnant women, the ordinary physical examination that one would get once a year at a doctor's office is worth very, very little. I know that don't sound right, but it is true. I could have all of my colleagues here examine you tonight and what they can find out by the ordinary physical examination is really very little, and they can't accomplish much; and for that I think the doctor is to blame for putting so much emphasis on its importance. It does have considerable value in the periodic examination of infants and pregnant women and I think, the slogan about 'consult your dentist twice a year' is all right, take it by and large, the periodic examination by this group of people would be worthless. Am I right?

Dr. Macatee:—No, sir, you are not. It is true that anyone of this group might come into my office and have a thorough physical examination and might go home and drop dead. That is based on the fact that you might have coronary sclerosis, which simply means you have hardening of the arteries, and that . . . to the internist is without physical signs. I think I will be able to tell you, however, that there are some indications that you are having some sporadic changes and your pace of life ought to be modulated, and that is a good deal. To answer Mr. Zimmerman's question practically, anybody with any income, unless he has to spend 100 per cent of his income for the actual necessities of life, in which case he is medically indigent so far as our experience is concerned, and we would find it necessary, unless we simply gave what they required, we would refer them to a clinic where some other doctor or perhaps ourselves, would do it in the setting of a clinic where we knew we were working gratuitously, in such hours as we set aside for that purpose. From the practical point of view, anybody can get a physical examination, and that requires a careful history taken if he is a new patient, that takes time, and then it requires the careful going over of the patient himself, and then it requires the doctor going back into his laboratory for the examination of the blood and urine, and what not. Altogether, if a man is careful and really wants the physical examination to amount to anything, it is going to consume about an hour of his time. If it doesn't require an hour of his time, it is going to require the services of his secretary, which, of course, is going to enter into the cost of the thing. If we take about $10.00 as the cost anybody getting $1,800 or $1,400 in the Government can, I think, in 95 per cent of the doctors' office, in this city, get the thing done and pay for it $1.00 a pay day.

Dr. Brown:—I think the greatest value of the periodic check-up is the early diagnosis and the . . .

Dr. Macatee:

Dr. Brown:—Therefore, it comes in that preventive field. Another thing I want to ask . . . the statement was made that a deterioration of the medical practice has resulted . . . of clinics. Have any of you gentlemen investigated the results of the Endicott Johnson . . . or any of the large clinics? . . . an improvement and a better practice of medicine because of the availability of every . . . means or any consultation—

Dr. Macatee:—I would say that the statement was made as to the deterioration as to the general practice of medicine in a nation. It would depend upon the universality of the application of the practice in a case of that sort. Any cooperatives or groups in the United States have touched such a very small . . . of the population of the country that it has not affected the general status of the . . . But let us get down to cases and consider what would happen in the District of Columbia provided you were able to obtain the maximum of enrolment in this corporation. As I pointed out a while ago, it would involve about one-third of the population of the District of Columbia. Well, one-sixth anyhow, of actual subscriptions, because there are about 100,000 employees. Multiply that by 3.3, you see what it would do here as an economic thing. . . . It would simply result in the necessary exodus of a large part of the medical profession of the District of Columbia, except those of us who have been in practice 30 or 40 years and are about to go on the shelf anyhow. It would result in the . . . of the new blood, which is necessary to keep up that end of it. It is impossible in the spur of competition in which medical men are by reason of economic force required to keep themselves abreast of the times and a little ahead, if they are going to get anywhere and in addition to that I would like to call your attention to the fact that we are all in accord with the idea that if people can lump their resources and those who are fortunate, their money goes to those who are unfortunate, that is all right, but you must remember that the medical profession recruits itself. It educates itself, it enlarges its capacity of itself and it is done by the social underwriting of the sum of medical fees that the whole population pay so that any social arrangement by which that underwriting is so manipulated that free competition, the free choice of physicians is limited, then you wreck the works. Now that will happen just in proportion as a social experiment involves larger and larger blocks of the . . .

Dr. Brown:

Mr. Penniman:

Mr. Loomis:—It seems to me that these gentlemen representing the Medical Society of the District of Columbia have the very genuine concern and apprehension about the effect of the operation of this voluntary organization in this area, a concern which we want to recognize honestly and deal with sympathetically. The point raised by Dr. MacAtee that such a large element of this population is made up of Government employees and that if the membership of this corporation reaches the nth degree, that a large proportion of the doctors in the District will be driven out of business, seems to me to be easily answered, that as we grow to that size, if we ever do, we will absorb the physicians here in the District presumably very much like the . . . that we contemplate for our present organization and that if that number of physicians is needed in this area, and are now making a living, that number would continue to be employed and continue to make a living on a basis of employment and income and because I recognize the serious concern of the group here reflected, I have no doubt but . . . runs through the profession in the District. I would like to ask a representative of this group whether it would not be agreeable to the committee and their associates to let this program of ours which is equally serious and built on the same principles which they hold in their medical fraternity of ethical service to our associates in this membership, if they wouldn't and can't very properly defer any decision or endorsement of this group until we have lived along a while and they have had an opportunity to judge us, not from a standpoint of what any other group has done, but from the standpoint of how we operate here. I assume, although I don't know, and haven't asked, that the Medical Society has not endorsed any considerable number of the other group associations and they are continuing to perform a very satisfactory service. I don't know and would seriously question until informed whether the American Medical Association has endorsed the Endicott-Johnson plan or whether they have endorsed any of these other plans and if that is a fact, can't they realize that we are just as seriously interested in doing the right thing by the medical group as they would do for us, simply delay any decision or any expression of point of view until we have operated, we being free all the time to consult them, they being free all the time to consult us, working together cooperatively, each recognizing the others ability and honesty, working it out together on a plan satisfactory to this group here.

Dr. Brown:—The question was stated that Germany has lost her place in the sun and her power to impart knowledge. I would like to ask you if the Hitler regime in Germany has not been responsible.

After the war these things have changed in Germany, Vienna, Paris and London, and since the war all of that has been lost to the United States, who has been much more progressive, who has had more means and more funds to proceed along these lines.

. . . . . .

Dr. Groover:—I think about Germany, there are many factors, but it is merely an implication . . .

Dr. Brown:—As a matter of fact, our investigation and my own investigation of these clinics—we find that better medicine is practiced than was practiced before in the same locality. I think that can be borne out also by the District.

Dr. Macatee:—Mr. Loomis made some statements to which I would like to reply, that the economic aspect of this project—I had not intended to touch upon it at all. It is not at present a matter that had received very much consideration but the discussion grew out of other things that had been said and if the corporation did succeed to the nth degree and if all of the other factors which I adverted to when I first spoke were ironed out, then of course the services of the organization would have to be conducted by the medical profession, because that is the . . . of the service, and they would be recruited from somewhere, presumably to the extent that they . . . from the District of Columbia, but the difficulty at present that we came to discuss with you and advance was the . . . we were unable to bring some concrete plan of cooperation and that we are unable to see how certain of these principles of ethics by which we are bound can be adjusted so that we will be able to cooperate in some way and to get such information as we could so that we will be able to advise our membership what their attitude should be.

Mr. Penniman:—Gentlemen, speaking in behalf of the Board of Trustees of this organization, I want to express to you gentlemen our very sincere appreciation of the courtesy of this visit, your remarks and your contribution to this meeting and to give you our assurance that everything that you have had to say here this evening will be given very careful consideration. We thank you for coming up and we hope that we may have the opportunity of seeing much more of you.

By Mr. Leahy:

Q.—Have you any recollection now, Mr. Penniman, as to how long after this meeting, the minutes of which have just been read, it was that Group Health Association entered into negotiations with Drs. Lee and Scandiffio?

Mr. Lewin:—I don't know whether I read it; the date of that meeting was July 26, 1937, this meeting from which I read.

The Witness:—I am not sure I can give you the date exactly; I think it was subsequent, of course, to the meeting.

(The discussion was then concerned with the time of subsequent conversations with prospective members of the staff.)

(The question was raised as to calling of legal counsel by G. H. A., Inc.)

Q.—You advised with them [Lee and Scandiffio]? You told them to withdraw the resignations, did you not?

A.—Yes.

Q.—And you did that because you wanted to put the District Medical Society in the position of expelling them, is that right?

A.—No.

Q.—Why did you tell them to withdraw their resignations?

A.—Because Mr. Sandidge of the Emergency thought that Lee was not entitled to hospital privileges since he was no longer a member of the society. I told him that so far as I knew he was a member. His resignation had been sent in, it is true, but not acted on; therefore in order "that you may continue with the privileges of the Emergency I suggest that you withdraw the resignation."

Q.—Did you suggest that with reference to Dr. Scandiffio for the same reason?

A.—I did.

Q.—Although you knew at the time that Drs. Scandiffio and Lee had resigned, or tendered their resignations, because they knew they could no longer remain members and continue to violate the society rules at the same time, you suggested that they withdraw those resignations?

A.—That is right. We were hopeful that some arrangements might be made and they would forget the charges.

Q.—Then you knew, did you not, that when the rule which Dr. Macatee had drawn to your attention on the 26th day of July, that a member of the association could no longer remain a member of the District Medical Society?

A.—He said that was the rule.

Q.—You knew, then, when you advised these doctors to withdraw their resignations that there was that rule in effect, and that Dr. Macatee had stated on the 26th day of July that that was one of the grounds of the uncertainty of the association as to how they should advise their members?

A.—That is right.

Q.—You will recall that after the resignations were withdrawn that the charge was then made that you referred to yesterday?

A.—Yes.

Q.—And that resulted in a trial?

A.—A hearing.

Q.—Did any members of the staff of legal counsel of H. O. L. C. represent Dr. Scandiffio?

A.—Yes. I testified to that yesterday.

Q.—The whole battery came up?

A.—On both sides; there was a battery for the District Medical Society, also.

Mr. Lewin:—Who was the heavy cannon in this battery?

By Mr. Leahy:

Q.—Dr. Russell, or Mr. Russell, was he not the chief counsel?

A.—Not for Group Health Association.

Q.—Was he chief counsel for Dr. Scandiffio?

A.—I wouldn't say he was chief counsel; I think Mr. York was the counsel.

Q.—How many hearings did you attend?

A.—Three.

Q.—Was there a hearing subsequent to them?

A.—I understood there was; I was out of the city on official business.

Q.—And each one of the three you attended was rather extensive?

A.—Yes.

Q.—Did you tell us yesterday that the reason why the contract which Dr. Macatee had inquired about, and also inquiry had been made in the meeting of June, at the executive committee, wasn't produced was because the Home Owners Loan Board had to give authority so it could be produced, is that right?

A.—Yes.

Q.—Did you ever seek the authority of the Home Owners Loan to do that?

A.—No.

Q.—Never did?

A.—No, nor do I know that the doctors made application to the board for it.

Q.—What doctors do you refer to, the American Medical Association?

A.—No, I had no contact with the American Medical Association.

Q.—The District Medical Society?

A.—Yes.

Q.—You knew that Dr. Woodward had inquired early in June concerning it?

A.—He never inquired of me.

Q.—You had no information on the subject?

A.—I was told, hearsay.

Q.—Did anybody of Group Health Association make application to the Home Owners Loan Bank Board for that contract?

A.—Not that I know of.

Q.—Under whose authority was it produced at the Scandiffio trial?

A.—The contract?

Q.—Yes.

A.—I guess general counsel of the Home Owners Loan Corporation.

Q.—You saw it produced there?

A.—No, I don't remember that it was.

Q.—Don't you remember that on the first night of the meeting that counsel representing the District Medical Society asked for the production of the contract and it was denied on the first hearing?

Mr. Lewin:—Which contract?

By Mr. Leahy:

Q.—Between Home Owners Bank Board and G. H. A.?

A.—I am not entirely clear on that; I think perhaps it might be true.

Q.—Don't you know it was emphasized by counsel there representing the society that he would like to have the contract; and counsel continued to say, "Why don't you produce the contract?" and, "Why can't we have the contract?"

Mr. Lewin:—I will have to object to that; this is not proper cross examination.

THE COURT:—He may answer.

The Witness:—I don't remember that.

By Mr. Leahy:

Q.—Didn't you know other people were interested in the contract: to find out what was in it?

A.—Yes, we knew there was a very determined effort to produce it.

Q.—And you were just as determined that it would not be produced?

A.—We couldn't see any reason for its production.

Q.—Why didn't you want it produced, that contract?

A.—The particular reason I didn't want to produce it was I didn't have authority. It was filed with the secretary of the Home Owners Loan; it wasn't in my possession.

By Mr. Leahy:

Q.—Now, passing that for the time being, did you say a short while before recess, when we were discussing Dr. Macatee's statement with reference to the legality of Group Health, that you never had any doubt about the legality of Group Health?

A.—Personally, I didn't; no question had been raised about it at that time.

Q.—Was that the belief of counsel, also, for G. H. A.?

A.—Very definitely.

Q.—Did there come a time when you changed your views?

A.—After we found out there was a good deal of action directed against Group Health, we decided there would be a test.

Q.—Did your own board of trustees change their views about the legality of G. H. A.?

A.—No.

. . . . . .

Q.—Did you never discuss with Mr. Russell, after Dr. Macatee had brought the attention of the group to the question of the legality of Group Health Association, after he had brought attention of the board to that in July, as to whether or not its by-laws should be revamped?

A.—No, I didn't discuss that; I recall that that was suggested to the board of trustees and, I think, by Mr. Russell.

Q.—And why were the by-laws to be revamped?

Mr. Kelleher:—We object to this; it is clearly beyond the scope of cross examination. We did not go into any of these matters on direct examination.

Mr. Leahy:—He brought that out himself, with reference to the cross examination.

Mr. Lewin:—Well, then you brought it out.

Mr. Leahy:—Well, then I have the right to search him on it. He said that one of the reasons why the Medical Society was uncertain as to what it could or should do was because of the question of legality; that such question had come up.

Mr. Kelleher:—He is now attempting to go into something on cross examination which was not testified to or concerning on direct examination.

Mr. Leahy:—Now, then, if your Honor pleases, he stated in response to a question as to whether he had supplied the information which Dr. Macatee asked for in that statement, with reference to the legality of the organization, he stated: "No, we didn't, because we had no doubt about the legality of the thing at all." Now, to search that answer I have a right to determine whether there was any doubt in his mind, or whether he was certain of the legality of the plan.

THE COURT:—I think the question may be answered; the objection is overruled.

Mr. Lewin:—Well, your Honor, should it not be limited in point of time?

THE COURT:—I can't be too restrictive; the whole examination is very extensive; particularly on cross examination.

Mr. Lewin:—Doesn't your Honor think that the question should be limited as to time?

THE COURT:—I think this apparently is shortly after that meeting.

Mr. Leahy:—Yes, your Honor.

THE COURT:—I will permit it; I don't mean that I won't put some limitations on the line.

Mr. Kelleher:—This matter relates to something, it is six months afterward.

THE COURT:—Let us go on.

By Mr. Leahy:

Q.—I ask you, Mr. Penniman, if the statement which Dr. Macatee made to you that night, on July 26, didn't cause you as a member of the board of trustees, through your counsel, Mr. Russell, to begin an investigation into the legal setup of G. H. A., as it then stood?

A.—I don't think so, just from the way you put it. I think Mr. Russell perhaps, investigating the by-laws, suggested certain changes which he thought should be made, and I think the board of trustees, relying on his judgment, agreed that they be made.

Q.—Why was the change in the by-laws suggested?

A.—I don't think it was suggested.

Q.—I will show you something to refresh your recollection; take a peek at that.

Mr. Lewin:—I should like to have the record show that we have no objection to this letter.

(Mr. Leahy handed the witness a document.)

By Mr. Leahy:

Q.—Doesn't that refresh your recollection?

A.—Yes.

Q.—Now, then, is it not a fact, having read that letter of Mr. Russell's, that you know that the legality of G. H. A., as to whether it was conducting an insurance company business at that time, was seriously in question, even among yourselves, even among yourselves, forgetting the medical profession?

Mr. Kelleher:—I make the same objection, because this letter is dated Nov. 16, 1937, a great many months after this statement about the legality.

THE COURT:—Overruled.

The Witness:—I think there had been a great deal said about the question of legality. I had heard it and seen it in the papers. There was a great deal of discussion. My recollection is that Mr. Russell, as we progressed, as we went along, as our legal adviser, made recommendations for such changes as he thought would be beneficial to the organization, presented them to the board, and the board agreed with him and followed his recommendations.

By Mr. Leahy:

Q.—Was it beneficial to the organization, or to strengthen the legal position of the organization?

Mr. Lewin:—Well, is there any difference in that? Any difference between those two things?

Mr. Leahy:—Yes, I think so; I think there is a difference.

By Mr. Leahy:

Q.—The motive was to strengthen the legal position of G. H. A., was it not?

A.—I think you will find the by-laws were written some time earlier in the year, and that Mr. Russell, as we went along, where he found any situation where he needed it to be strengthened, recommended to the board such changes, and the board adopted the recommendations.

Q.—Now, with that letter before you, let me ask you if, on the 16th day of November, 1937, Mr. Russell then didn't present to the Federal Home Owners Bank Board what was then a revamped set of by-laws, and if he didn't assign as the reason for the amendments that they were "to strengthen the legal position"?

A.—Yes. He didn't revamp the by-laws; he made certain changes which he felt, as an attorney, were necessary to strengthen the association's position.

Q.—He revamped the by-laws to get around the situation that it was conducting an insurance company business in the District of Columbia without authority, did he not?

A.—I think he limits, in that letter, the reasons for the amendments.

Q.—And those changes were made at that time because he, as general counsel, felt it necessary to amend its by-laws in order to strengthen the legal position of G. H. A. if it should be determined that the association was in the insurance business, isn't that true?

A.—I think that is the position that Mr. Russell took; it was his idea.

Q.—Now, were you so certain then, even after the amendments had been submitted to the board and, as you say, approved, that you were still not violating the law?

A.—What? Were we certain that we were not violating the law?

Q.—Yes. Were you certain of that?

A.—I had no idea we were violating the law.

Q.—Will you be good enough to take a look at the second sentence of the last paragraph of the letter and see if that refreshes your memory?

A.—Yes, that refreshes my recollection.

Q.—That refreshes your recollection?

A.—Yes.

Q.—Now, does Mr. Russell there state or reflect the views of the board which approved these by-laws when he stated, "This revision excludes memberships except in the case of employees of the executive branches of the Government, excluding the Army and Navy, and this provision is made to assure us the benefit of an exception from insurance regulations if we are held to be an insurance company": Does that reflect the views of the board of Home Owners Loan?

A.—Well, I am not an attorney, Mr. Leahy, and Mr. Russell undoubtedly went into this question very carefully; and he presented his views to the board, we accepted his views.

Q.—Do you recall now, after reading this letter, why it was that Mr. Russell made the statement, "if we are held to be an insurance company"?

A.—I think there was a great deal said about Group Health; that it would be held to be in the insurance business, an insurance company.

Q.—That was the thought in your own group?

A.—No, that was the thought outside the group.

Q.—And your own group was not certain about it?

A.—I personally wasn't, but the lawyers would have to work that out.

Q.—Then your lawyer advised you he was not certain?

A.—Yes.

Q.—And what he was trying to do was that he was trying to get the advantage of the insurance laws in force in the District of Columbia if you were held to be an insurance company; isn't that it?

THE COURT:—He would only know if Mr. Russell expressed that view to him.

By Mr. Leahy:—

Q.—Well, I will ask him the question if this is the letter that reflected the views?

Mr. Lewin:—Of whom? I think you ought to read the whole letter. You are taking bits of it.

Mr. Leahy:—I don't wish to offer it at this time; this is not our case.

Mr. Lewin:—You Honor, I think he ought to read the whole letter.

THE COURT:—Well, you will have the right to offer it on re-direct examination. That particular piece of paper doesn't belong to any particular side. You may offer it if you wish.

Mr. Lewin:—Well, your Honor, I don't think he is using it as refreshment material for the benefit of this witness.

THE COURT:—If you think it ought to go in evidence, you may offer it and I will rule on it.

Mr. Leahy:—If your Honor please, I have submitted to counsel a letter dated July 27, 1937, to which there was no objection. I don't care to offer it in evidence.

THE COURT:—You are not going to offer it at this time?

Mr. Leahy:—No; I just wish to refer to certain portions of it.

By Mr. Leahy:

Q.—I am just going to ask you whether you collaborated in the preparation of the third paragraph with Mr. Childress: the third paragraph on the second page. Did you collaborate with Mr. Childress in writing that document?

A.—No, I don't recall that, and of necessity I would not be the one.

Q.—Why do you say "of necessity"?

A.—Because Mr. Childress is liaison officer between the Home Owners Loan and Congress, and all communications to Congress are referred to him. He investigates the circumstances of the inquiry and makes reply to Congress. That being one from Congress, it could have gone to Mr. Russell or Mr. Kirkpatrick, or any one.

Q.—Did you know that senators were making inquiry about this contract that we have mentioned at this very time?

Mr. Lewin:—This is certainly beyond the scope of our direct examination.

THE COURT:—Yes, I think so.

Mr. Leahy:—It is just on the point as to why they didn't want to produce the contract.

THE COURT:—I think he has given his answer that he assumed he didn't have any authority to produce it. It makes no difference if other people were interested in the contract.

By Mr. Leahy:

Q.—Now, Mr. Penniman, following the meeting of July 26, the minutes of which were read, did you discuss with any member of the Medical Board of the District of Columbia the question which had been raised at that meeting?

A.—Not that I recall.

Q.—See if I can refresh your recollection. Do you know Dr. Hooe? Do you know the gentleman?

Will you kindly stand up, Doctor?

(Thereupon Dr. Hooe stood up in the courtroom.)

A.—Very well.

Q.—Did you have luncheon with him shortly after that meeting, in the Metropolitan Club in the District of Columbia?

A.—I had luncheon with Dr. Hooe, at his invitation, at the Metropolitan Club, but I don't know whether it was before or after or how soon after that meeting.

Q.—Do you recall discussing with him the matter of Group Health Association and the District of Columbia Medical Society's attitude with reference to it?

A.—Yes.

Q.—And do you recall what word you left with Dr. Hooe with reference to the attitude of Group Health with reference to cooperating with the District Medical Society?

A.—I can't say what I told him; we were there at the Metropolitan Club about two and a half hours.

Q.—I will ask you if you stated to Dr. Hooe on that occasion that if Group Health Association didn't conform to what the American Medical Association thought the practice of medicine should be, as expressed in its code of ethics, that the American Medical Association could change its code of ethics, but you were not going to change Group Health Association; you were going forward?

A.—No.

Q.—Nothing in substance similar to that?

A.—Not even in substance do I recall any such statement.

RE-DIRECT EXAMINATION

By Mr. Kelleher:

Q.—Did you explain to Dr. Neill that Group Health Association involved group practice?

A.—Yes.

Q.—Did you explain to him that it involved prepayment?

A.—Yes, I think so.

Q.—Did you explain to him the duties of a medical director?

Mr. Leahy:—I think he has been all over that.

Mr. Kelleher:—Yes, but you have also tried to bring out from this witness that his disclosures were partial, not complete.

THE COURT:—Oh, he may answer that.

The Witness:—I think we went into that pretty thoroughly.

By Mr. Kelleher:

Q.—Did you refrain from discussing with him anything about the organization of Group Health except the contract between Group Health and the Federal Home Loan Bank Board?

A.—I don't think that question came up during the discussion. We were approaching him with the hope of procuring him as our medical director. We wanted to discuss the proposed plan with him. We went into it in detail.

. . . . . .

By Mr. Kelleher:

Q.—Do you recall what Mr. Zimmerman told you about the call of Dr. Woodward?

THE COURT:—Well, if a conversation is to be admitted we might as well admit the letter.

Mr. Kelleher:—It is material here because the question has arisen as to what he knew. During cross examination he was asked as to what he knew as to the controversy as of the time he talked with Dr. McGovern.

Mr. Leahy:—No such question was asked about that.

Mr. Lewin:—Yes, there was, I can give it to you. And just this morning Mr. Leahy asked him if he knew about the doubts the defendant had towards G. H. A. This bears directly on it. This is the very knowledge that he must have had about the so-called doubt; this communication that he got in writing.

Mr. Kelleher:—And yesterday afternoon Mr. Leahy asked Mr. Penniman what he knew about the controversy existing at the time he saw Dr. McGovern.

Mr. Leahy:—It is very clear all I was doing was asking Mr. Penniman as to his recollection of the conversation with Dr. McGovern. We already had in evidence the testimony of Mr. Zimmerman that they talked about the horses and dogs and came away, in Mr. Zimmerman's recollection, without knowing why they had the luncheon at all, and I was developing that.

THE COURT:—I think it is objectionable; objection sustained.

Mr. Kelleher:—I am not going to offer it, but I would like to use it to refresh the witness's recollection.

THE COURT:—As to what?

Mr. Kelleher:—What he knew about the call from Mr. Woodward, or Dr. Woodward, to Mr. Zimmerman.

Mr. Leahy:—Ask him if he has ever seen it before.

THE COURT:—If I am not mistaken, my recollection is that his recollection was refreshed, wasn't it?

Mr. Kelleher:—No, Mr. Zimmerman's.

THE COURT:—Will counsel come forward, please?

AFTER RECESS

WILLIAM F. PENNIMAN—RE-DIRECT EXAMINATION (RESUMED)

By Mr. Kelleher:

Q.—Mr. Penniman, I show you memorandum dated June 5, 1937, and ask you to read it please.

A.—(The witness examined paper.) Yes.

Q.—Mr. Penniman, does this memorandum which I have handed you and which you have read, refresh your recollection about what you knew about Dr. Woodward's call on Mr. Zimmerman when you talked with Dr. McGovern on July 16th?

A.—Yes.

Q.—Will you tell us now what Mr. Zimmerman told you about Dr. Woodward's call?

A.—Mr. Zimmerman told me that Dr. Woodward, I believe purporting to represent the American Medical Association, had called on him and had asked him for certain information. I think he wanted to get the contract, I think he wanted to get a copy of the Federal Home Loan Bank Act, inquiring about the money paid over by the Federal Home Loan Bank Board to Group Health Association; and several questions of that character; which Mr. Zimmerman confirmed in a memorandum to me. He wanted me to know about the visit, and he gained the impression from Dr. Woodward—

Mr. Leahy:—I object to any impressions.

THE COURT:—Objection sustained.

By Mr. Kelleher:

Q.—Will you tell us what Mr. Zimmerman said Dr. Woodward said to him?

A.—He told me that Dr. Woodward had told him he was going to oppose it, that they were very much concerned about this organization, and that if this money could be appropriated here for the organization of Group Health, it could be done elsewhere, and he was very much against it.

Q.—Did Mr. Zimmerman say that Dr. Woodward said whom he was going to oppose?

Mr. Leahy:—I object as entirely leading.

Mr. Kelleher:—He has already stated it.

Mr. Leahy:—Then why emphasize it?

Mr. Kelleher:—All I want to know is whether Dr. Woodward told Mr. Zimmerman what he was going to oppose.

Mr. Leahy:—Now, if your Honor please, a memorandum was submitted to the witness on the stand under close limitation set by the Court. The very matter now which is inquired about is within the limitations excluded. I respectfully object to any further questions on it.

Mr. Kelleher:—Will you Honor hear me on this?

THE COURT:—Well, I think I understand the situation.

Mr. Kelleher:—Well, all right.

THE COURT:—I think your question is unnecessarily suggestive. Let Mr. Penniman—in order that we won't go too far—let him give his own recollection of what factual things were stated. That would come within the limitations of my ruling.

Mr. Kelleher:—Very well, your Honor.

THE COURT:—In other words, confine yourself merely to any facts Mr. Zimmerman stated to you as distinguished from any impressions that Mr. Zimmerman may have stated to you.

The Witness:—Well, he stated to me that Dr. Woodward told him he was going to oppose the organization of Group Health Association.

By Mr. Kelleher:

Q.—Did Mr. Zimmerman tell you that Dr. Woodward had said anything about the annual meeting of the American Medical Association at Atlantic City?

A.—Yes. Yes, he mentioned that, and wanted this information, so Mr. Zimmerman told me, as they intended to make it a subject of discussion before the annual meeting of the American Medical Association at Atlantic City.

Q.—Will you look at this memorandum again, please, refer to the last paragraph?

A.—(The witness examined paper.) Yes.

Q.—Will you tell us whether Mr. Zimmerman told you that Dr. Woodward said that he would oppose the organization personally or not?

A.—No, he was going to organize—

Mr. Leahy:—Why lead?

THE COURT:—Yes. That is very leading, Mr. Kelleher. In other words, when it comes to refreshing his recollection, you you don't want to put the words in his mouth.

Mr. Kelleher:—I don't intend to.

THE COURT:—I am sure you don't intend to?

Mr. Kelleher:—May I rephrase the question, then.

By Mr. Kelleher:

Q.—Will you tell us whether Mr. Zimmerman told you what Dr. Woodward meant when he said that he was going to oppose this organization?

Mr. Leahy:—I object. It calls for a conclusion of the witness.

Mr. Kelleher:—Not at all, your Honor. I am asking whether he said what Dr. Woodward meant.

THE COURT:—The question is, what did Dr. Woodward say, not what Dr. Woodward meant. Let the jury draw the conclusion as to what he meant. What did he say? Quote what he said.

The Witness:—Well, I can't quote what Dr. Woodward said because I wasn't there.

By Mr. Kelleher:

Q.—What Mr. Zimmerman told you Dr. Woodward said.

A.—Mr. Zimmerman told me that Dr. Woodward said he was a member of the American Medical Association, and that they were going to organize to oppose this group Health Association.

(The witness was questioned again about conversation with Col. Glen I. Jones and Dr. Hooe.)

By Mr. Kelleher:

Q.—Had you finished your testimony concerning what Dr. Hooe said at the Metropolitan Club?

A.—Yes. It was a general conversation. He just had this other plan.

Q.—Did he explain the plan, the other plan which he had in mind, to you at the Metropolitan Club?

A.—I think in general terms he did that.

Q.—Will you tell the jury what he said concerning his plan?

A.—Well, as near as I can recall the plan he proposed was that we could have membership in an organization such as Group Health and collect dues, but that we need not have a staff of doctors or nurses or space, or equipment, or what not, that we could use the local doctors and out of the dues collected from the membership, we could pay for the services performed on its members by these doctors; that those that were not sick would help to defray the expenses of those that were in need of it.

Q.—Did his plan as explained to you contemplate group practice?

(Then came interrogation regarding a telephone conversation with Dr. Hooe.)

By Mr. Kelleher:

Q.—Did you discuss the Lee and Scandiffio hearing at that conversation?

A.—I did that evening over the telephone.

Q.—Will you tell us the substance of that conversation, please?

A.—Well, I told Dr. Hooe I felt very keenly about the way Dr. Lee and Dr. Scandiffio had been treated, and that if my understanding was correct, they were entitled to a hearing, by virtue of a letter sent over his signature, and that Dr. Lee and Dr. Scandiffio replied to that letter requesting a date to be set for the hearing, and also stating they would like to appear with counsel, and it was the understanding that that hearing would be before this C. C. & I. M. Committee, and that that hearing had never been granted.

As a matter of fact, Dr. Lee tendered his resignation before the second meeting and Dr. Scandiffio was tried on the basis before the Executive Committee, and never did go before the C. C. & I. M. Committee. And I told Dr. Hooe:

"You knew at the time that you had promised Dr. Lee that if he would give his resignation to Group Health, that you would be glad to recommend the cancellation of all charges against him."

I said "You knew that, Dr. Hooe."

Q.—What did Dr. Hooe say?

A.—Dr. Hooe didn't deny it, of course.

Q.—Did Dr. Lee resign from Group Health Association?

A.—He did.

By Mr. Kelleher:

Q.—Was there anything more in the conversation with Mr. Sandidge?

A.—I did testify that Dr. Sandidge said that that was the occasion for them sending the usual form notice; and that they would write him a letter. And I thanked him very kindly, and he said they did reinstate him.

Q.—Did you tell Mr. Sandidge about a conversation which you had had with Dr. Neill?

A.—Yes, I told him that Dr. Neill had told me that he was still a member, and that his resignation had not been acted on.

Q.—Had you talked with Dr. Neill?

A.—Yes, I think I had.

Q.—Will you give us the substance of that conversation?

A.—Yes. I just called him up and told him what Mr. Sandidge had done, and what Mr. Sandidge had written Dr. Lee, and asked Dr. Neill if that was the procedure, and he said "Why, no. Dr. Lee is still a member of the Medical Society by reason of the fact that we have not acted on his resignation"; and he was going to get in touch with Mr. Sandidge himself; and I think he did.

Q.—One other thing, Mr. Penniman, and I am through. Will you tell us what action was taken by the District Medical Society concerning Drs. Lee and Scandiffio between the period when those two gentlemen tendered their resignations from the society, and the time when they withdrew their resignations?

Mr. Leahy:—I object to that. If there is any action, it is a matter of record.

THE COURT:—Well, that is true, unless Mr. Penniman was there present with the board, committee, or whatever it was, when they announced their action. If he was there and heard him announce his decision or action, of course he may state it.

By Mr. Kelleher:

Q.—Do you know whether Drs. Lee and Scandiffio received any communication from the Society during that period?

A.—Yes, they received this letter that I referred to saying that they had violated—

Mr. Leahy:—I object. The letter is the evidence.

THE COURT:—Objection sustained.

Mr. Lewin:—We want the privilege of recalling this witness to put in this correspondence with hospitals.

THE COURT:—That is understood.

RE-CROSS EXAMINATION

(Mr. Leahy again questioned the others about the Zimmerman memorandum to Penniman.)

By Mr. Leahy:

Q.—When was it Mr. Zimmerman had this conversation with you?

A.—Why, it was either that same day or the next day, I think. It was immediately afterward.

Q.—Did you call Mr. Russell, to advise as to whether or not you ought to show him that contract?

A.—No, I didn't.

Q.—Did Zimmerman state he had gotten any legal advice as to whether he could show the contract or not?

A.—He didn't say to me, no.

. . . . . .

Q.—Didn't you say Dr. Hooe's idea would make Group Health a collection agency?

A.—Yes.

Q.—What did you mean by that?

A.—We were going to collect dues. I thought you meant the amount of the dues. We were going to collect those under his plan, monthly dues.

Q.—Aren't you doing that under Group Health?

A.—Yes.

Q.—Then why is there any distinction between the collection agency you have and the collection agency of Dr. Hooe?

A.—There is a very wide distinction.

Q.—What is that?

A.—If I am to be permitted to dwell on it, a member of Group Health under the plan had an opportunity to go up to the clinic under a staff of doctors.

Q.—I didn't ask as to that.

Mr. Lewin:—Certainly this is responsive to his question and he ought to have it.

THE COURT:—I think the question calls for the opinion of Mr. Penniman. He stated the proposition of Dr. Hooe as Dr. Hooe proposed it to him. Now, we can determine just as well as Mr. Penniman the difference between the two plans. I don't think we need to go into it.

By Mr. Leahy:

Q.—I will ask you this: In your collection of the dues, you did see to it that the various subscribers of the service paid their dues into G. H. A. Isn't that right?

A.—Yes.

Q.—And you collected them, didn't you?

A.—The business office did.

Q.—Did you have collectors through the department?

A.—Yes, I think so.

Q.—And, at first, you had the check-off system, didn't you, to compel the payment of dues?

A.—No, sir. Never.

Q.—I thought you did.

A.—Absolutely not. We never had a check-off system by which we compelled members to pay dues; never.

Q.—Didn't you have a form which the subscriber signed, in which he authorized deduction from his check?

A.—Yes. I am glad you brought that up.

Q.—Well, did you, or did you not?

A.—We had on our blank a space for the member to indicate whether he wanted to pay direct or whether he voluntarily, as a convenience to him, desired it taken out of his salary check.

There was no compulsion on that.

Q.—Did you have a by-law on the question?

Mr. Lewin:—The by-laws speak for themselves.

Mr. Leahy:—That is what I am getting right now. (Examined papers.)

Mr. Lewin:—Well, the by-laws are in evidence.

By Mr. Leahy:

Q.—I will say further, didn't there come a time when, in the amendments to the by-laws which we spoke about this morning on the Mr. Russell letter, that you dropped that from your by-laws?

Mr. Lewin:—Objected to on the same ground, the by-laws speak for themselves. Your Honor sustained the same objection for Mr. Leahy.

THE COURT:—Very well.

By Mr. Leahy:

Q.—Is that a copy of the check-off? (indicating).

Mr. Lewin:—He has testified there was no check-off, and Mr. Leahy is mischaracterizing the testimony in this case time and time again. I object to it.

THE COURT:—I think it would be better not to give it a name.

Mr. Leahy:—All right.

Mr. Lewin:—There is no check-off, and you know it.

Mr. Leahy:—I know no such thing. I know if somebody collects, it is just like a labor union.

Mr. Lewin:—This jury is going to know about it.

THE COURT:—Give the witness a chance.

By Mr. Leahy:

Q.—Is that it (indicating)?

A.—It is purely a voluntary—

Q.—I am asking you if that is what that is in the by-laws.

Mr. Lewin:—I make the same objection, the by-laws are in evidence; the by-laws are the best evidence.

By Mr. Leahy:

Q.—Now, did you—

Mr. Lewin:—Wait a minute. I want a ruling before you get the same thing in the back door.

THE COURT:—If you insist on that I will have to sustain it.

Mr. Lewin:—I am going to have to hold Mr. Leahy down to the proof. He is going perfectly wild here.

Mr. Leahy:—That isn't speaking very well for your Honor.

THE COURT:—I will look after myself.

Mr. Leahy:—I thought I had been very calm about the matter.

THE COURT:—If there is no question of that being the terms of the by-laws there is no reason for wasting time looking up the by-laws.

Mr. Lewin:—I think what is sauce for the goose is sauce for the gander. We have been getting all these technical objections in order to get out a simple story.

THE COURT:—You have been getting a good many breaks.

Mr. Lewin:—I don't think we have been getting, your Honor—

THE COURT:—I am dispensing them impartially and freely.

Mr. Lewin:—I know your Honor means to. I think this is a highly improper way to bring this out.

THE COURT:—Suppose you go on to something else.

By Mr. Leahy:

Q.—Well, I was directing your attention to this particular assignment. I wasn't asking about the by-laws.

Mr. Kelleher:—I thought you said it was in the by-laws, Mr. Leahy.

THE COURT:—Put a question. Let us start all over.

By Mr. Leahy:

Q.—I will ask you now if that is an assignment, or a photostatic copy of the assignment which Group Health authorized in the collection of its dues.

Mr. Kelleher:—Your Honor, may I object to this as being outside the scope of the re-direct. We never went into this phase at all.

THE COURT:—Well, I sustain the objection.

Mr. Leahy:—That's all.

TESTIMONY OF THEODORE WIPRUD

DIRECT EXAMINATION

By Mr. Lewin:

A.—Theodore Wiprud stated he has been secretary of the Medical Society of the District of Columbia since June 1, 1938. Before that time he was executive secretary, Medical Society of Milwaukee County. Dr. C. B. Conklin had been secretary since about 1922. From him Mr. Wiprud obtained the custody of the minutes of the District Medical Society.

Q.—And have you produced those minutes here in response to a subpoena, which designates the minutes of specific meetings?

A.—I have.

Q.—And are these the minutes that are before you?

A.—They are.

Q.—On this table. Now, do you know Dr. Conklin's signature?

A.—Yes. I do.

(Mr. Wiprud then identified the minutes of the District Medical Society, the meeting for Jan. 6, 1937 and subsequently.)

Mr. Wiprud also identified minutes of the executive committee and produced the roster of the society and the list of officers and committees.

CROSS EXAMINATION

By Mr. Leahy:

Q.—Is it not a fact that under Hospital Committee, as it is denominated here under the regular committees, there was no Hospital Committee at all in the District Medical Society from July 1, 1938?

Mr. Kelleher:—Objected to as leading, your Honor. This man may be technically called by us, but he happens to be the secretary of the defendant Society, and I do not think counsel for the defense should be permitted to lead him.

THE COURT:—The paper speaks for itself on that.

Mr. Leahy:—Was there an objection to the question?

THE COURT:—Yes. It seems to me the paper speaks for itself.

Mr. Magee:—We have a stipulation covering this, your Honor.

Mr. Kelleher:—No. There are certain members of the Hospital Committee, but both sides are free to show other members.

By Mr. Leahy:

Q.—Do you know well enough, with reference to the publication of the Medical Annals of the District of Columbia, to know that it always published accurately the membership of the various committees?

A.—Well, there were times when the committees were not accurate, when there was a death or something—a change.

(There were further questions about the roster of officers and committees.)

RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—Now let me show you Government Exhibit No. 31 for identification, which purports to be a letter from you to the American Medical Association, Council on Medical Education and Hospitals, dated Dec. 13, 1937. Is that your signature?

A.—It is; yes.

Q.—Did you send that letter to the American Medical Association, Council on Medical Education and Hospitals?

A.—I did.

Q.—I show you Government Exhibit No. 30 for identification, which purports to be a copy of a letter in reply, dated Dec. 22, 1937, and I ask you whether that is a correct copy of the reply that you received?

A.—It appears to be.

Mr. Lewin:—I offer those two letters in evidence.

Mr. Leahy:—Does your Honor care to see these?

Mr. Kelleher:—Your Honor, to clear up the record I might say this in connection with these documents, that they tie up with the offer which we made yesterday of the proceedings of the House of Delegates for 1934, and I now desire to renew the offer of the volume concerning those proceedings. There were certain portions, if your Honor recalls, that were reserved as to the ruling until counsel for the defense could see the volume and make their objections. I now offer the other portions of the proceedings.

(After considerable discussion the following material from the proceedings of the House of Delegates was admitted as evidence. Mr. Leahy asked to record exception.)

"Proceedings of the House of Delegates of the American Medical Association," referred to and discussed at the bench, are as follows:

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

. . . . . .

3. At the New Orleans session the House of Delegates requested an analysis of hospital staffs with a view to determining how many of the physicians connected with hospitals are members of the American Medical Association. The amount of clerical work involved has prevented a check of all the 6,437 hospitals in the country, but a sampling of a large number shows that 87 per cent of the staffs of these hospitals were members of the American Medical Association.

Since the management of hospitals is a function of ownership, it does not seem to be practicable for the Council or for the American Medical Association to lay down a rule that only members of the county society may be given hospital appointments. Obviously, there would be no way of enforcing such a rule. However, it is believed that in all institutions where the staff members have a voice in the selection of their colleagues, an effort should be made to bring into the local society every physician who may be regarded as eligible for a hospital appointment."

"RESOLUTION LIMITING PHYSICIANS ON STAFFS OF HOSPITALS APPROVED FOR INTERN TRAINING TO MEMBERS OF COMPONENT COUNTY MEDICAL SOCIETIES

Dr. G. Henry Mundt, Illinois, presented the following resolution, which was referred to the Reference Committee on Medical Education: (45) (46)

Resolved, That it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates requests the Council on Medical Education and Hospitals to take this under advisement.

PROPOSED AMENDMENTS TO PRINCIPLES OF MEDICAL ETHICS

Dr. George Edward Follansbee, Chairman of the Judicial Council, presented the following three amendments to the Principles of Medical Ethics, which were referred to the Reference Committee on Amendments to the Constitution and By-Laws: (46) (47)

1. WHEREAS, The Judicial Council in its report to the House of Delegates at the Milwaukee session in 1933 recommended the simplification of the section in the Principles of Medical Ethics relating to contract practice by the addition of the wording appearing later in this resolution; and

WHEREAS, The recommendation of the Judicial Council was approved by the reference committee to which it was referred, and was adopted by the House of Delegates; therefore be it

Resolved, That the Principles of Medical Ethics, chapter II, article VI, section 2, be amended by adding to the present wording the following:

By the term "contract practice" as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are:

1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract because of any of its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole.

2. WHEREAS, The growth of groups and clinics has intensified the economic competition between them and individual practitioners; and

WHEREAS, The common custom of employment of "business managers" by the clinics and groups has had a tendency to submerge the ethical principles governing competition among doctors; and

WHEREAS, Clinics and groups were little known, were not serious competition and were not mentioned when the present general revision of the Principles of Medical Ethics were adopted in 1912; be it

Resolved, That the Principles of Medical Ethics be revised as follows:

Chapter I shall read (heading) "In General."

Section 1 to remain as it is.

Section 2 to be added as follows (heading) "Groups and Clinics."

"Sec. 2. The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession."

The remainder of chapter I becomes chapter II with its present heading.

Present section 2 of chapter I becomes section 1 of chapter II.
Present section 3 of chapter I becomes section 2 of chapter II.
Present section 4 of chapter I becomes section 3 of chapter II.
Chapter II becomes chapter III.
Chapter III becomes chapter IV.

3. *Resolved,* That the Principles of Medical Ethics be amended by inserting as section 4 of article VI, chapter II, "It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

RESOLUTION ON APPARENT ATTEMPT OF BOARD OF REGENTS OF THE AMERICAN COLLEGE OF SURGEONS TO DOMINATE AND CONTROL MEDICAL PRACTICE

Dr. Charles J. Whalen, Illinois, presented the following resolution, which was referred to the Judicial Council:

WHEREAS, The American Medical Association, including in its membership almost 100,000 physicians, is the only body representing all of the organized profession of this country through delegates regularly elected through county and state medical societies; and

WHEREAS, Various similar medical organizations and groups, including in their membership selected groups of specialists of various types, have from time to time issued pronouncements of policies in the field of medical economics and medical practice, which do not represent the views of organized medicine; and

WHEREAS, The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies, which seriously embarrass the attempts of your organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession; and

WHEREAS, The Board of Regents of the American College of Surgeons, assembled in Chicago on Sunday June 10, promulgated a policy including a prepayment plan for medical care, restricted to the hospitals approved by the American College of Surgeons, to members of the staffs of such hospitals, and to physicians acceptable to such staffs; and

WHEREAS, This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the press on the opening day of the annual session of this House of Delegates; therefore be it

Resolved, That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice to the detriment of professional ideals and the welfare of the public.

REPORT OF REFERENCE COMMITTEE ON MEDICAL EDUCATION

. . . . . .

3. The resolution introduced by Dr. G. H. Mundt, delegate from the Illinois State Medical Society, specifying that the staffs of hospitals designated for intern training should comprise only members in good standing in their local county medical societies, is referred to the Council on Medical Education and Hospitals with the following comment:

Your committee approves the principle of this resolution but feels that its general application at the present time is inadvisable. Paragraph 3 of the report of the Council indicates that approximately 87 per cent of the staffs of the 6,437 hospitals of the country are members of the American Medical Association.

. . . . . .

Dr. Abell moved that the first section of the report, dealing with the printed report of the Council on Medical Education and Hospitals, be adopted. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

. . . . . .

Dr. Abell moved that Section 3 of the report, referring to the resolution limiting physicians on staffs of hospitals approved for intern training to members of component county medical societies, be adopted. The motion was seconded by Dr. William H. Ross, New York.

Dr. G. Henry Mundt, Illinois, moved as a substitute motion that the resolution as introduced by him be adopted. The substitute motion was seconded and carried, after discussion by Drs. R. W. Fouts, Nebraska; John F. Hagerty, New Jersey; B. F. Bailey, Nebraska; James E. Paullin, Jr., Section on Practice of Medicine; Irvin Abell, Kentucky; William F. Bowen, Kansas; C. S. Gorsline, Michigan; W. E. Bannen, Wisconsin; Virgil E. Simpson, Kentucky; Charles B. Wright, Board of Trustees; Mather Pfeiffenberger, Illinois; E. H. Cary, Texas; Leonce J. Kosminsky, Arkansas, and Horace Reed, Oklahoma.

REPORT OF THE REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. H. H. Shoulders, Chairman, presented the following report:

Three amendments to the Principles of Medical Ethics were referred to your committee for consideration. They were all prepared by The Judicial Council and introduced by the Chairman, Dr. G. E. Follansbee, who came before the committee to give valid reasons for the adoption of each of these amendments.

Your committee finds that the amendments do not add any new principles. They all serve the purpose of facilitating the interpretation of the principles by the membership at large.

Your committee cannot describe these amendments in language more brief than the amendments themselves:

1. WHEREAS, The Judicial Council in its report to the House of Delegates at the Milwaukee session in 1933 recommended the simplification of the section in the Principles of Medical Ethics relating to contract practice by the addition of the wording appearing later in this resolution; and

WHEREAS, The Recommendation of the Judicial Council was approved by the Reference Committee to which it was referred, and was adopted by the House of Delegates; therefore be it

Resolved, That the Principles of Medical Ethics, chapter II, article VI, section 2, be amended by adding to the present wording the following:

"By the term 'contract practice' as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum for a fixed rate per capita.

"Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are: 1. When there is solicitation of patients, directly or indirectly. 2. When there is underbidding to secure the contract. 3. When the compensation is inadequate to assure good medical service. 4. When there is interference with reasonable competition in a community. 5. When free choice of a physician is prevented. 6. When the conditions of employment make it impossible to render adequate service to the patients. 7. When the contract because of any of its provisions or practical results is contrary to sound public policy.

"Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

2. WHEREAS, The growth of groups and clinics has intensified the economic competition between them and individual practitioners; and

WHEREAS, The common custom of employment of "business managers" by the clinics and groups has had a tendency to submerge the ethical principles governing competition among doctors; and

WHEREAS, Clinics and groups were little known, were not serious competition and were not mentioned when the present general revision of the Principles of Medical Ethics were adopted in 1912; be it

Resolved, That the Principles of Medical Ethics be revised as follows:

Chapter I shall read (heading) "In General."

Section 1 to remain as it is.

Section 2 to be added as follows (heading) "Groups and Clinics."

"SEC. 2. The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession."

The remainder of chapter I becomes chapter II with its present heading.

Present section 2 of chapter I becomes section 1 of chapter II.

Present section 3 of chapter I becomes section 2 of chapter II.

Present section 4 of chapter I becomes section 3 of chapter II.

Chapter II becomes chapter III.

Chapter III becomes chapter IV.

3. *Resolved*, That the Principles of Medical Ethics be amended by inserting as section 4 of article VI, chapter II, "It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

Your committee recommends the adoption of the amendments.

Respectfully submitted,

H. H. SHOULDERS, Chairman.
J. N. HUNSBERGER.
H. C. MACATEE.
E. A. HINES.
R. L. SENSENICH.

The recommendation of the committee that section 2, article VI, chapter II of the Principles of Medical Ethics be amended, as suggested in the first amendment submitted by the Judicial Council, was adopted on motion of Dr. Shoulders, seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried. Dr. Arthur C. Morgan, Pennsylvania, then moved that section 2, article VI, chapter II of the Principles of Medical Ethics be amended as recommended by the Reference Committee. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

Dr. Shoulders moved the adoption of the recommendation of the Reference Committee approving the amendment to chapters I, II and III of the Principles of Medical Ethics, as suggested by the Judicial Council in its second proposed amendment. The motion was seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried. Dr. Arthur C. Morgan, Pennsylvania, thereupon moved that these chapters of the Principles of Medical Ethics be amended in accordance with the recommendation of the Reference Committee. The motion was seconded by Dr. A. J. Scott, Jr., California, and carried.

On motion of Dr. Shoulders, seconded by Dr. Charles H. Goodrich, New York, and carried, the recommendation of the Reference Committee that section 4, article VI, chapter II of the Principles of Medical Ethics be amended as suggested by the Judicial Council in its third proposed amendment, was adopted, after discussion by Dr. R. W. Fouts, Nebraska, and Dr. Shoulders. Dr. Arthur J. Bedell, New York, moved that the Principles of Medical Ethics, section 4, article VI, chapter II, be amended in accordance with the recommendation of the Reference Committee. The motion was seconded by Dr. A. J. Scott, Jr., California, and carried.

REPORT OF THE JUDICIAL COUNCIL

Dr. George Edward Follansbee, Chairman, presented the following report:

A resolution introduced by Dr. Charles J. Whalen, Illinois, calls attention to a recent action by the Medical Service Board of the American College of Surgeons approved by its Board of Regents, advocating and publicizing a procedure for furnishing medical and hospital care for certain classes of the population. No consideration appears to have been given to policies or procedure previously adopted by the American Medical Association, of which the Board of Regents are members. The American Medical Association is the one organization representing the entire body of physicians constituting the medical profession and by virtue of that fact is the only organization qualified to speak for the varying interests and ideas of the profession as a whole.

Recurring proposals concerning the entire practice of medicine from small sections of the profession without due regard to the policies of the entire profession as represented by the American Medical Association when presented to the public through other channels than the representative body are confusing to the public mind, are harmful to the profession and give aid and assistance to those bodies and individuals attempting to revolutionize medical practice.

The Judicial Council therefore recommends the adoption of the resolution as follows:

WHEREAS, The American Medical Association, including 100,000 physicians, is the only democratic body representing the organized profession of this country through delegates regularly elected through county and state medical societies; and

WHEREAS, Other medical organizations and groups, representing selected groups of specialists, have from time to time issued pronouncements of policies in the field of medical economics and medical practice, which do not represent the views of organized medicine and which purport to guide the medical profession and the public in the administration of medical affairs; and

WHEREAS, The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies, which seriously embarrass the attempts of this organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession; and

WHEREAS, The Board of Regents of the American College of Surgeons, assembled in Chicago on Sunday, June 10, promulgated a policy including a prepayment plan for medical care, restricted to so-called "approved hospitals" to members of the staffs of such hospitals, and to physicians acceptable to such staffs; and

WHEREAS, This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the public press on the opening day of the annual session of this House of Delegates; therefore, be it

Resolved, That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this apparent attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice; and be it further

Resolved, That the House of Delegates request the Board of Trustees of the American Medical Association and the Judicial Council to ask the Board of Regents of the American College of Surgeons, who are themselves members of the American Medical Association, to explain the reasons for their action and to justify the attempt by this small group within a specialistic organization to legislate for all the medical profession of this country, truly represented by the American Medical Association.

The report of the Judicial Council was adopted on motion of Dr. C. E. Humiston, Illinois, seconded by Dr. Albert Soiland, Section on Radiology, and carried unanimously.

REPORT OF SPECIAL COMMITTEE

Dr. Nathan B. Van Etten, Chairman, read the following report of the Special Committee appointed to consider the resolution from the delegates of the State of Michigan submitted to the House of Delegates and a statement of the Board of Trustees concerning Sickness Insurance in the United States:

1. The following resolution was submitted by delegates of the Michigan State Medical Society:

WHEREAS, There is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States; and

WHEREAS, During the course of its studies of medical economic problems, the Michigan State Medical Society, after a conference with officials of the American Medical Association, found it necessary to send a commission to England to inquire into the subject of health insurance; and

WHEREAS, The commission presented the following reports . . . (which has been printed in full in the *Journal of the Michigan State Medical Society* and placed in printed form in the hands of all of the delegates of this House); and

WHEREAS, The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy on the practicing membership of the American Medical Association; and

WHEREAS, The report of the commission was transmitted to the Board of Trustees of the American Medical Association through the chairman in February 1934; and

WHEREAS, The Michigan State Medical Society has received no word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted on the report transmitted in February 1934; therefore be it

Resolved, That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England, the Speaker of the House of Delegates of the American Medical Association appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates.

. . . . . .

Dr. Van Etten moved that the first section of the report, dealing with the resolution on health insurance submitted by the Michigan State Medical Society, be adopted. The motion was seconded by Dr. Carl F. Moll, Michigan, and Dr. C. F. Gorsline, Michigan, and carried.

Section 2 of the report, referring to the criticisms of policy and the sincerity of officials of the American Medical Association, was adopted on motion of Dr. Van Etten, seconded by Dr. L. J. Hirschman, Michigan, and carried.

On motion of Dr. Van Etten, seconded by Dr. Joseph F. Smith, Wisconsin, and carried, the third section of the report, relative to the statement of the chairman of the Board of Trustees reviewing the action of the House on the question of health insurance, was adopted.

Dr. Van Etten moved that section 4 of the report, dealing with the pamphlet entitled "Sickness Insurance Problems in the United States," be adopted. The motion was seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried after discussion by Dr. Julius B. Harris, California, Dr. William C. Woodward, Director of the Bureau of Legal Medicine and Legislation, Dr. Walter E. Vest, West Virginia, and Dr. Holman Taylor, Texas, in which it was agreed that the words "legally qualified doctor of medicine" should be substituted for the word "physician" in the third principle.

On motion of Dr. Van Etten, seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried, the report, as amended, was adopted as a whole.

By Mr. Lewin:

Q.—On the bottom of Government Exhibit 30 appear certain initials of the writer, and I take it of the stenographer. Will you tell the jury what those initials are and the names of the persons for whom the initials stand. First the initials of the writer.

A.—I think the writer is Dr. C. M. Peterson.

Q.—Do you know who Dr. C. M. Peterson was at that time?

A.—I can't say that I do.

Q.—Do you know whether he was connected with the American Medical Association?

A.—I know he was associated with the American Medical Association.

Q.—Do you know whether he was identified with the Council on Medical Education and Hospitals?

A.—I am not certain; I think he was.

Q.—Do you know who the secretary of that association was at that time?

A.—Dr. William Dick Cutter.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—In your letter of December 14, you asked for the requirements or regulations, did you, governing hospitals? For the hospital staffs?

A.—Yes, sir.

Q.—I notice in the blue sheet, "Enclosed are the regulations": Where are they?

A.—I don't know.

Q.—Were the regulations enclosed with the letter?

A.—I can't remember.

Q.—You don't know where they are now?

A.—I do not.

Mr. Leahy:—That is all.

THE COURT:—Those letters will be admitted.

TESTIMONY OF DOROTHY EVERETT

DIRECT EXAMINATION

Dorothy Everett, Chevy Chase, Maryland, was employed by the District Medical Society, from February, 1924, to Sept. 30, 1938 as clerk and stenographer.

She identified correspondence of Drs. Conklin, Hooe, Neill, and Sprigg.

Mrs. Everett also took notes of meetings to get the gist of the conversations, that is, of the business sessions.

THURSDAY, FEBRUARY 13, MORNING

TESTIMONY OF DOROTHY EVERETT (Resumed)

Mr. Kelleher:—Your Honor, in order to expedite the introduction of these documents through this witness, we have now given photostatic copies of the documents which we intend to offer, to Mr. Leahy, and if it is agreeable with your Honor we would like to have the witness identify the originals and I will hand them to you, which will permit your Honor to read the document while counsel for the other side is examining it.

THE COURT:—Very well.

The witness identified letters further including:

Circular letter 7/29/37 from Dr. Conklin
Letter 11/5/37 Neill to Warfield
Letter 12/10/37 Hooe to D. C. Medical Society
Letter 2/25/38 Conklin to Hooe
Letter 5/18/38 Hooe to Sprigg
Letter 5/14/38 Hooe to Trible
Letter 5/31/38 Conklin to Trible
Letter 6/7/38 Sprigg to Trible
Letter 11/10/37 Hooe to Lee
Letter 11/22/37 Hooe to Lee
Letter 11/19/37 Lee to Hooe
Letter 11/24/37 Spriggs to Lee
Letter 11/2/37 Hooe to Scandiffio
Letter 11/18/37 Neill to Scandiffio
Letter 11/10/37 Hooe to Scandiffio
Letter 11/22/37 Hooe to Scandiffio
Letter 11/24/37 Spriggs to Scandiffio
Letter 1/29/38 Conklin to Blair
Letter 1/27/38 Blair to D. C. Medical Society
Letter 1/29/38 Conklin to Warfield
Letter 11/25/37 Conklin to Warfield
Letter 9/13/37 Conklin to Woodward

CROSS EXAMINATION

By Mr. Leahy:

The cross examination covered the nature of the records, the fact that Mrs. Everett occasionally had a substitute; meetings were held in a large auditorium.

TESTIMONY OF MICHAEL DAVIS

DIRECT EXAMINATION

Michael M. Davis stated he is a doctor of philosophy, graduate of Columbia University, in 1906.

From 1910 to about 1920, he was in charge of the Boston Dispensary, a large clinic with a small hospital. In 1920, he returned to New York City and was chairman of a committee on dispensary development, which was financed by a grant from the Rockefeller Foundation, to improve the standards of clinics and dispensaries in New York, and throughout the country. He was also a consultant in hospital organization, and made studies of hospitals and clinics in different cities. He was continuously occupied with that work, giving it all his time in the latter part of the period from 1925 to 1929.

Q.—Briefly, what is a consultant on hospital organization?

A.—A consultant on hospital organization: well, in that capacity I would call, invited by individual hospitals or community chests, or other organization; I would go to a city, Cleveland, New York, for example, and study the needs of the city; its hospitalization needs; whether the present existing hospitals were sufficient; whether additional hospitals and clinics were needed; make a report to the local organization as to what was needed, if anything; make a general study of the entire subject in so far as it related to that particular locality.

Q.—During the period while you were with the committee on dispensary development did you organize any pay clinic?

A.—Yes, I organized a pay clinic, which I might explain, is a clinic for people who can pay for the care they get, for the medicines, et cetera; who can pay a fee, including payment to

the doctor in the clinic; I organized a small one in Boston and a larger one in New York, under the auspices of the Cornell Medical College.

He remained with the committee on dispensary development until the beginning of 1927, and until 1929 was on a consultant basis. In 1929 he went to Chicago to be director for the Medical Service of the Julius Rosenwald Fund, a philanthropic foundation, established by Mr. Julius Rosenwald, the late president of Sears, Roebuck Company, for the welfare of mankind. The purposes of the Foundation were to give money to worthy causes within the field of the Foundation and designated for its activities.

Q.—Is it limited to the field of medicine?

A.—No, it is, or I should say, its main field was Negro welfare, Negro education; Negro health in the South. The medical side was secondary, although a fairly important part of the Fund's work.

Q.—Did you tell us what your position was with the Julius Rosenwald Fund?

A.—I was in charge of all their medical activity, that is to say, in making grants of any money for any medical purposes we thought worthy. Our business was to make a study of the desirability of making a grant where it was applied for and I was also responsible for making studies of medical development generally, and directly for the Funds in the field that is to be expended or were to be expended in the field of economics of medicine, or medical economics; that is the cost of medical care.

Q.—Did you teach at the University of Chicago?

A.—Yes, for most of the time from 1931 to 1936 I held a teaching position on the faculty of the University of Chicago, teaching a course on "Social Aspects of Medicine in the Development of Sociology"; and I also took charge of a course in hospital administration to teach men and women the management of hospitals. That course was started in the University of Chicago about 1933, and continued there while I was at that institution, and, thereafter by some one else.

Q.—During that period while you were with the University of Chicago, did you sponsor an annual institute for the American Hospital Association?

A.—It ran an annual institute which I was in charge of, the American Hospital Association; the institute being designed to help men and women who were already in charge of hospitals to improve their knowledge, by bringing them together for meeting and discussion, two or three times yearly.

Q.—Are you still with the Julius Rosenwald Fund?

A.—I am not with the Fund. I am working with a committee, to which the Fund has granted money; so while I am not directly with the Fund, I am with this committee which is operating with the assistance of the Fund.

Q.—What is the name of that committee?

A.—Committee on Research on Medical Economics.

. . . . . .

Q.—Did you ever serve on any committee with Dr. Hugh Cabot?

A.—Yes.

Q.—Will you please tell us the name of that committee?

A.—A committee for the study of group medical practice, which Dr. Cabot and I and several other men were members of; the active work having been done a year, two years ago; about a year ago. The committee's work was organized for the purpose of studying group medical practice, and its chief task was to prepare a statement of principles under which group practice should be conducted.

Q.—You have stated that you made, as a hospital consultant, you made certain studies of hospitals in various large cities of the United States. Will you tell the jury the nature of those studies?

A.—The studies were for the purpose usually of finding out the needs of the cities; their need for additional hospitals; the adequacy of the hospitals; the extent to which they were used, and in some institutions the study might be asked by a single institution where the board of trustees wanted a study made to determine just how that hospital was being run and whether its management or organization could be improved in certain ways. Some studies were also made for the purpose of studying enlargements of any existing buildings, and extensions of facilities offered.

Q.—Did you in the course of those studies familiarize yourself with the organization of staffs of hospitals?

A.—The organization of hospital staffs, I have to do that, to familiarize myself with every phase of that in order to make such studies.

Q.—Will you also tell us whether you were affiliated with any national organization of hospitals?

A.—I have been a member of the American Hospital Association for about 25 years, or more; have been a Fellow of the American Public Health Association; have been very active in the American Hospital Association; was chairman of their council for the years 1935 and 1936, and then just finished a three-year term as chairman of a committee on education. I have been chairman of a committee of the American Public Welfare Association, and have been active in the American College of Hospital Administrators, which is an organization for the training of hospital administration. I am an honorary Fellow of that organization.

Q.—Will you tell us whether you have written anything for publication on hospitals and medical care?

A.—I have published a number of books on the subject. A book in 1907 on dispensaries; a larger book in 1937 on clinics and hospital and health matters dealing with their management and organization. Then several books on the cost of medical care, "Paying Sickness Bills" in 1931; a volume in which I collaborated with Dr. Rowland, in 1932; a book on public medical services in 1937; a book on hospital administration as a career in 1929. I have written a large number of articles for professional and lay journals on hospital subjects and the cost of medical care, and related matters.

Q.—Now, I should like to ask you a few questions on hospital matters. Will you compare first the value and importance of hospitals as of today with those of such hospitals in the past?

A.—Yes. The hospitals are very much more important today than they were 60 or 70 years ago; in 1940, as compared with 1870. In 1870 the population of the United States was 40,000,000 persons. At that time there were approximately 50,000 hospital beds in the w' ole country. In 1940, the population was 133,000,000, and the number of hospital beds 1,200,000. That means that during that period, while the population of the country grew about three and one-third times the number of hospital beds increased twenty-four times. There were approximately one and a quarter beds per one thousand of population in 1870, and somewhat over nine hospital beds per 1,000 in 1940.

Q.—Dr. Davis, do you know approximately what the investment in hospitals is today?

A.—The amount of investment in hospitals and clinics and their subsidiary buildings is somewhere between three and a quarter and three and a half billion dollars in the United States.

Q.—What is the source of that investment?

A.—The great bulk of that money, that investment in the hospitals has resulted from gifts or grants either by private individuals, or local and state bodies, federal government to some extent, minor extent, putting tax money in equipment of hospitals.

Q.—Are you familiar with the extent to which doctors are utilizing these hospitals today?

A.—The figures, the figures of the American Medical Association show that approximately two thirds of all doctors in the United States have some affiliation with a hospital; that is, the large majority have affiliation with hospitals.

Q.—Do you know whether doctors consider affiliation with hospitals of value to them in the practice of their profession?

A.—They consider it very valuable and important. Of course, in surgery, for instance, the connection with a hospital, which entitles a surgeon to treat and operate on his patient in a hospital, is practically essential to the conduct of his practice. It is also very important to any physician otherwise; whether he be a medical man or a surgeon.

Q.—Will you tell us what kind of hospitals there are from the point of view of service?

A.—Hospitals, general hospitals, which treat any kind of acute ailment or illness brought to them; and special hospitals, such as mental, tubercular, eye and nose and throat, and maternity; such hospitals take only those cases specified.

Q.—And the latter type of hospital is called a special hospital?

A.—Yes.

Q.—I should like now to have you describe about how hospitals are organized, first. Who handles the financing and business affairs of hospitals?

A.—The hospital usually, not always, but as a rule, hospital finances and the ownership of the property is vested in a lay board or committee, usually a board of trustees, sometimes the governing body of a church, which holds title to the property and is responsible for the finances; the business management of the institution.

Q.—What are the duties of such a lay body?

A.—It is the owner and controller of the hospital. Its duties are to manage the hospital property, to see that it is properly conducted; and its duties are also to appoint the medical staff, that is, the physicians and surgeons, who do the actual medical professional work of the hospital, for which it was established.

Q.—Is it possible for such a lay body to handle the finances of the institution, to handle the management of the business end of it, without interfering with the medical offices of the hospital, the doctors?

A.—They do it all the time. The typical American hospital is run in friendly cooperation with the medical staff, composed of the doctors appointed by the board, and the lay board; and with this body and its executive officer, or superintendent, who is the business executive or general manager of the hospital for the governing body.

Q.—You referred to the medical staff. I assume you mean the regular or attending medical staff?

A.—Yes, the regular or attending medical staff which is appointed by the lay body, and who have the responsibilities incident to the professional work, the medical work in the hospital.

Q.—Will you be a little more specific about the duties of the medical staff?

A.—Yes, the medical staff consists, not only of a certain number of physicians and surgeons who are appointed as individuals and who are given the privilege of treating patients in the hospital; it is also an organization of physicians required by national professional standards to provide medical care, so that the attending staff has its own organization, let us say, a governing body for its own professional work, and, through that body, studies and controls the professional standards of the hospital, subject, of course, to the oversight of the lay body, which has the legal control of the property of the institution. A wise lay body does not interfere with the professional work in the hospital. That is a matter which is, and properly should be, left to members of the medical profession.

Q.—Who supervises the charity cases that come to the hospital?

A.—The charity work for hospital patients treated free by the physicians is controlled by the governing board who must decide how much charity work they can do. The professional staff give each a part of their time to caring for free patients in the wards of the hospital.

Q.—And do they also supervise the work of the outpatient department in the hospital if it has one?

A.—The outpatient department for people who are able to be up and about and come to the institution for care without going to bed is supervised again by the lay governing body in general and actually controlled and managed by the physicians who are in the clinic of the hospital and do the actual work in caring for the sick.

Q.—Dr. Davis, are the regular staff of the hospital paid a salary?

A.—In some cases, yes, but as a rule most of the staff are not paid a salary. They get their remuneration by having private practice in the hospital without being paid by the hospital, in most instances.

Q.—Who pays the medical staff?

A.—If the medical staff are paid they may be paid by the hospital, but that is in the minority of cases. The attending physician or surgeon who carries on the private practice is paid directly by the patient himself and by the private arrangement between the patient and physician who cares for him in the hospital.

Q.—Dr. Davis, is membership on the regular staff of the hospital of any value to a doctor?

A.—Membership on the regular staff of the hospital is of much value to the doctor, because it gives him definite prestige, which helps his whole practice.

Q.—How does that prestige help him?

A.—Connection with a hospital is regarded in the medical profession and also by a large portion of the general public as something that is a sign of good standing in the medical profession A physician who is a member of a good hospital staff has a definite prestige as a result of such background.

Q.—Doctor, I assume you have been speaking during your testimony about the regular or attending staff?

A.—Yes.

Q.—Do the hospitals also have what they call courtesy staffs?

A.—A great many hospitals have in addition to their regular staffs, a courtesy staff, which may be small or may be very numerous, a courtesy staff of physicians who are given by this appointment of the lay board, the privilege of treating patients in the hospitals under certain restrictions which may be laid down, but who are not members of the hospital organization and do not share in the professional responsibility and standards of the hospital.

Q.—Does the courtesy staff share in any of the affairs of the hospital?

A.—As a rule the members of the courtesy staff are invited to staff meetings in which disease problems and cases are discussed.

Q.—And when they are invited to a meeting, it is for the benefit of the doctor who enjoys that courtesy staff privilege?

A.—It is something he gets through being a member of the courtesy staff.

Q.—Dr. Davis, you stated that the lay board appoint the members of the courtesy staff. What function does the regular medical staff play in the appointment of the courtesy staff?

A.—The regular staff, usually through its staff committee or the board chosen by it, usually nominates or advises the lay board as to the physicians who should be appointed on the courtesy staff.

Q.—And as a rule, or as a matter of general practice, does the lay body generally follow the recommendations of the regular medical staff?

A.—They usually follow the recommendations of the medical staff. They appreciate the qualifications of a physician can best be determined by other physicians who act responsibly for the lay board.

Q.—Doctor, excluding emergency cases, can a doctor use hospital facilities in the United States except as a member of the regular or courtesy staff of a hospital?

A.—By and large, no, he may not. There are some hospitals which are open to anybody, but those are exceptions.

Q.—Dr. Davis, are you familiar with whether hospitals are inspected and approved by organizations in the country?

A.—Yes. Necessarily, visiting and studying hospitals, I have had to be familiar with those approval systems. The American Medical Association inspects a certain number of hospitals to determine whether they should be approved to receive interns for training.

Q.—What other organization inspects and approves hospitals?

A.—The American College of Surgeons also inspects hospitals and has an approved list of hospitals that have passed its inspection as having met its standards. There are various other bodies which in some of the states under the state law inspect hospitals; some of the nursing bodies in some of the states inspect hospitals to determine whether they are of the proper standing to train nurses.

Q.—Dr. Davis, are you familiar with the American Medical Association hospital register?

A.—Yes. The American Medical Association publishes a list of registered hospitals which is, on the whole, the most complete and authoritative list of hospitals we have.

Q.—Is registration of this register of hospitals of value to a hospital?

A.—A hospital which is not on the registered list of the American Medical Association is definitely regarded, as a rule, as suffering from the exclusion. Those hospitals are generally regarded as being inferior to hospitals that are on the registered list.

Q.—Is there any limitation in the size of the hospital as to whether it will be registered in the A. M. A. registry?

A.—The size of a hospital does not bear on inclusion in the registry list. It does bear on the list for approval for training interns.

Q.—All right. Let us get to that matter. Will you tell us, Doctor, briefly, what an intern is?

A.—An intern is a physician who has just graduated from medical school, received his four-year course, and who is taking one or more years learning in hospital work in a continuation of his training period. In a hospital he has opportunity to work with sick people under the direction of the staff.

Q.—And is an internship a part of a doctor's education today?

A.—The internship has come to be regarded as an essential part of the doctor's training. One or more years' internship in a hospital is now regarded as an essential part of a doctor's training.

It is a legal requirement in some of the states but is regarded as a professional requirement in some states.

Q.—Dr. Davis, what is a resident?

A.—A resident is one who is working in a hospital but who is further along and is working in a specialty, surgery or eye work or nose and throat work. He is working to train to practice in a specialty.

Q.—Dr. Davis, do most of the hospitals pay interns for their services?

A.—A good many hospitals pay interns but the payment is only nominal. It ranges from $15 to $25 a month.

A good many don't pay anything at all. The training is such that he seeks the training with little or no compensation. He is given his lodging and maintenance while he is in the hospital.

Q.—What does the hospital receive in return for training the intern?

A.—The hospital gains a certain amount of actual services in caring for sick people from the work of the intern. He is an unpaid and very hard worker during the period of his internship. He is learning by working very hard.

A hospital also gains a certain amount of prestige from being regarded as sufficiently good to train interns.

Q.—Dr. Davis, does the A. M. A. approve hospitals for the training of residents as well as interns?

A.—Yes.

Q.—Will you tell us now whether the A. M. A. considers the size of a hospital in passing on approval of the hospital for the training of interns?

A.—Yes. The general standards are a hospital which has as many as one hundred beds and as many as seventy-five patients. I believe there are exceptions to that but in general that is the size, the smaller hospitals generally being regarded as not being sufficiently large to give valuable training to an intern.

Q.—Dr. Davis, what is the importance of A. M. A. approval so far as the ability of the hospital to obtain interns is concerned?

A.—Approval by the American Medical Association for receiving interns is extremely important to a hospital. A hospital which does not have that approval will generally find it impossible to obtain young men who will be willing to go there and work as interns. So that if a hospital wishes to have interns, and most hospitals wish very much to have interns, it is extremely important from their point of view that they have approval.

Q.—What is the effect on the prestige of a hospital of the withdrawal of approval for intern training?

A.—If a hospital would lose its approval for receiving interns and it could no longer get interns willing to come to it and work there for their training, it would lose, in the first place, the services of these young men.

If it were to continue, generally speaking, the same quality of service to the patients, it would have to employ them, on salary; not a nominal amount but a salary; young medical men to do the work which the interns would do if they were there. So there would be a substantial financial loss to the hospitals if that approval were taken away.

And the hospital also loses prestige. Physicians on its regular staff would feel that the hospital had suffered substantially. They might be inclined, some of them, to shift their patients to other hospitals.

Q.—And why will graduates from medical schools refrain from taking their internship at hospitals not approved by the A. M. A.?

A.—The young medical man is keen to get the best training that he possibly can. He seeks an internship in a place which will give him not only good training as he understands it, but also will give him good standing in the profession, so that when he gets through the internship and into practice he will be able to have the good will and good opinion of other physicians; and if he has had internship in a hospital which is regarded as not up to form, it is a definite handicap to the young man if he has had his training there.

Q.—Dr. Davis, would it ordinarily make any difference in the effect upon the hospital of the loss of approval if the reason for the approval was withdrawn?

A.—Well, if the reason were publicly known and clearly defined, the local community might consider that, but in general the reasons are not likely to weigh with a great many people, doctors and lay people. The mere fact that the hospital is not on the approved list is going to be a handicap to it.

Q.—And will have the effects which you have described?

A.—Yes.

Q.—Dr. Davis, were you a member of the committee on the costs of medical care?

A.—Yes, sir.

Q.—Will you describe the formation of that committee, please?

(The witness then described the organization, work of and results of the Committee on the Costs of Medical Care.)

The chairman was Dr. Ray Lyman Wilbur. The committee originally was formed of fifty members. It ended its fifth year with forty-eight, because of deaths and unfilled places. Of the forty-eight members twenty-five were doctors, one of the twenty-five being a dentist as well as a doctor. Fourteen of the twenty-five doctors were engaged in private practice. Others on the committee included men engaged in public health work who are not physicians, as well as several physicians who are engaged in public health work; several prominent sociologists and economists: There were three dentists on the committee, two nurses; two or three men connected with pharmacy or with the drug business; and a number of people engaged in social or civic work, and men of general public interest. Nobody on the committee represented officially any organization.—

A.—The committee of the costs of medical care made a series of studies of the amount of service, the cost of service, and various other subjects, and published reports of the findings of the studies. The committee also after it had completed its studies made recommendations as to what should be done to make medical care more available.

One very important study was a study made of about nine thousand families from all parts of the United States to find out how much sickness they had in the course of a year; how much care they had for the sickness which they experienced; and what the care cost them.

This study was carried on by having each family visited approximately every six weeks or two months throughout the whole year by a trained person who found out the general facts about the family, what sickness they had had, what care they received, and what they had spent for their care.

The committee made studies of the medical care in certain communities. It studied the care in Philadelphia and Detroit. It studied some rural areas in the South and a county in Indiana and a county in California.

It made a study as to the incomes of physicians, the incomes of dentists, in cooperation with the American Dental Association.

Finally the committee made a study of new plans of medical care; it made a study of some prepayment plans where the employees of a large corporation get medical service and pay for it on a weekly pay roll deduction basis.

It studied plans of medical care furnished by universities for their students; it studied the medical care of the Army, at one of the large Army posts.

So it became familiar through its reports with various new plans and types of organized schemes of medical care.

There was an executive committee of eight persons which supervised every study. Technical people were employed to carry on the details. That staff was closely supervised by the executive committee, which planned the studies with the staff and which read and criticized the studies as the material came in from the field, with the members of the staff; the executive committee meeting every month.

The nine thousand families were selected so that they would represent in communities of different sizes all of the types of income groups, some people who were very poor, on relief, up to comfortable incomes. They were also selected from different parts of the country and different sizes of family.

The selection was made by selecting different types of community and then turning to the local people for help in selecting the family. A family known to be of a certain economic type were visited routinely. In other cases they were selected by those who were able to pick the families or advise the committee they were picking the proper families.

Each of the families was visited not more than a two months period to not more than a twelve weeks period, so the facts of the family were obtained.

The families were classified as to income under $1,200, under $2,000, $2,000 up to $3,000, $3,000 to $5,000, $5,000 to $10,000, and $10,000 or over.

Q.—Will you tell us approximately how many individuals were involved in these nine thousand families?

A.—Approximately thirty-eight thousand individuals.

Q.—What conclusions did the committee on the costs of medical care reach concerning the relation between the amount of medical care received by the families and their incomes, as a result of the studies of these nine thousand families?

A.—Roughly, the more income families had the more medical care they received. We can measure the medical care in terms of the number of visits from or to a physician during the course of a year. For families of income under $1,200 a year it showed an average of one and nine-tenths visits from or to a physician during the course of a year. The number of calls or visits from or to a physician increased with each increase in income, until at the top level families of income of $10,000 and over received four and seven-tenths visits from or to a physician during the course of a year. So there was a steady progression.

Another way of measuring the amount of care, of course, is in relation to hospitalization. The average amount of hospitalization is measured in terms of the hospital days; that is, a person who goes to a hospital and spends one day there, that is recorded as a unit of hospital service, one patient-day's care. Now, in that unit we found a very interesting and surprising thing with families of the lowest income, some of whom were on relief. The average amount of care received by an individual in a hospital during a year was nine tenths of a hospital day; a little less than one day's care. When we moved to the

next group, $1,200, the amount of hospital care dropped to about sixty-six one-hundredths; that is about two thirds of a hospital day instead of nine tenths. Then, after that, in general, the amount of hospital care received rises with income, reaching about one and two tenths hospital days' care for the families of incomes of $10,000 and more; hospital day's care for the person in that group.

There were a substantial number of families, not quite half the total number, of individuals, who received no medical care. Of course, it is clear that there are two reasons for that; one is that they are not sick; the other is that they were sick but didn't get care. So the percentage of persons not receiving care throughout the year was about 47 per cent of the total number of persons. That percentage, however, was less among people with larger incomes than among people with smaller incomes, so there again was a shift as we went up in the income scale, the proportion of people who received no care, medical care, during the year, grew less, substantially less. Among the highest income group only about one person in seven went without any medical care during the year; whereas, of the lowest income group about half went without any care.

By Mr. Kelleher:

Q.—Did the study consider whether there was any reason why there should be less sickness in the low income groups than in the high income groups?

A.—This study did not make a particular investigation of that point.

Q.—Have you made any investigation of that point?

A.—I have not personally. I am familiar with studies which I regard as authoritative which have made investigations of that point.

Q.—What have those studies shown?

Mr. Leahy:—Let us see what the studies showed.

By Mr. Kelleher:

Q.—What are the studies?

A.—After the committee on medical care a number of additional studies have been made.

For example, several studies conducted by the Milbank memorial fund entitled "Health and the Depression"; then another study conducted in 1935 and 1936 by the Government through the United States Public Health Service, usually called the National Health Service.

Those studies led to certain conclusions on the matter you have asked me. I regard those studies as authoritative.

They reached the conclusion that there was more sickness generally among people of small income than among people in comfortable circumstances. The difference isn't as great as the difference in income, but on the whole, people in the smaller income groups have more sickness; as shown by these studies. The study of these nine thousand families led to the conclusion, which we all knew in advance, that sickness falls unevenly, and, its cost likewise. It did, however give us some figures showing how unevenly the burden does fall. For instance, in the income group of between twelve hundred and two thousand a year about 5, a little more than 5 per cent of the families, had relatively large sickness bills running through—in the year, running to a total of $250 or more; and that 5 and a fraction over per cent of the families had spent for sickness 32 per cent of the total amount spent by all the families. If we compare that with the families who had little sickness and low costs therefor, we find that almost 70 per cent of the families spent about 24 per cent of the total; whereas, a little over 5 per cent of the families spent 32 per cent of the total. So that a relatively heavy burden falls on a small proportion of the families; who, of course, cannot predict in advance whether they are going to be the lucky or unlucky ones in most of the cases.

About 10 per cent of all the families bear about 41 per cent of the total burden of sickness costs during the year. On the other hand, 58 per cent of the families bore only 18 per cent of the burden.

A large number bore a small burden and a small proportion bore a heavy burden.

The committee made a number of recommendations, the committee making a main report signed by thirty-five of its members, and a minority—several minority reports with differing recommendations being made. The committee was not unanimous in its recommendations.

There was no criticism of the study in the minority report but the recommendation for action differed. The thirty-five included seventeen physicians.

Of the seventeen, I think nine were in private practice. The others were physicians in hospital and university and other salaried positions.

The main recommendations of the majority were to develop the medical care on a group payment, that is, on a prepayment basis, preferably in association with group medical practice.

The main minority report criticized group payment as tending towards undesirable contract practice and various evils and criticized group medical practice; so that the main minority report did oppose these recommendations.

Defendants West and Christie were among the nine signers of the main minority report.

A final report of the committee was published called "Medical Care for the American People," at the end of 1932.

. . . . . .

FEBRUARY 13, AFTER RECESS

TESTIMONY OF MICHAEL M. DAVIS (RESUMED)

THE COURT:—You may proceed, if you are ready, Mr. Leahy. I think Mr. Kelleher is through.

Mr. Kelleher:—Yes, I am, your Honor.

Mr. Leahy:—If your Honor please, if the Government is through with this witness the defense feels that it is not necessary to go into any cross examination, and we will ask that the witness be excused.

Mr. Kelleher:—If your Honor please, I offer in evidence portions of Proceeding of the House of Delegates of the American Medical Association, marked in red pencil on pages 21, 51, 55 and 59 of the proceedings for 1933.

Mr. Kelleher:—I am now reading from the proceedings of the House of Delegates of the American Medical Association, 84th Annual Session held at Milwaukee, Wisconsin, June 12 to 16, 1933 (reading):

"RESOLUTIONS FROM CONSTITUENT STATE MEDICAL ASSOCIATIONS REQUESTING NATIONAL MEDICAL ORGANIZATIONS TO DECLARE OPINIONS ON MEDICAL PRACTICE THROUGH APPROVED CHANNELS

The following resolution adopted by the board of trustees of the Medical Society of the State of Pennsylvania, has been transmitted to this Board:

. . . . . .

WHEREAS, There have been formed important national organizations of physicians, specialists, other than the American Medical Association, and

WHEREAS, Such organizations fundamentally formed for scientific purposes have from time to time publicly expressed opinions concerning the entire practice of medicine, especially in its social and economic relationships, and

WHEREAS, An unusual emphasis on the social and economic position of medical practice has recently been precipitated by the published report of the national committee known as the Committee on the Costs of Medical Care; be it

Resolved, That, in the interest of the welfare of the public and the maintenance of the most serviceable form of medical practice, the proper representatives of the American Medical Association request other national medical organizations whose qualifications for membership include membership in the American Medical Association to declare publicly their opinions on general social, legislative, and economic relationships of medical practice only through approved channels of the American Medical Association. To this end the Board of Trustees of the Medical Society of the State of Pennsylvania pledges its own efforts and influences to bring about this most desirable point of view in the minds of the members of the Medical Society of the State of Pennsylvania, who are also members or Fellows of the other organizations referred to. They also respectfully request the Board of Trustees of the American Medical Association to bend every effort to accomplish this purpose throughout the Association at the earliest possible moment in order that the same evolutionary progress of medical practice may not be disturbed by social experiments which endanger the health and the welfare of our citizenship, and which have proved a pernicious health influence in other nations.

A similar resolution adopted by the council of the State Medical Society of Wisconsin has also been submitted. (52) (55)"

The proceedings show that the resolution was adopted.

The next is a resolution endorsing the minority report of the Committee on the Cost of Medical Care (reading):

"RESOLUTIONS ENDORSING MINORITY REPORT OF COMMITTEE ON THE COSTS OF MEDICAL CARE

Dr. Henry C. Macatee, District of Columbia, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Medical Society of the District of Columbia has endorsed the Minority Report of the Committee on the Costs of Medical Care, and has undertaken to engage in an intensive campaign to educate and inform its constituency regarding the socio-economic aspects of medical practice, with a view to the maintenance of high ethical standards and the preservation of professional ideals:

(*a*) By the dissemination of literature;

(*b*) By the organization of a speakers' bureau for the purpose of presenting various aspects of the subject to the membership;

(*c*) By the organization and conduct of study groups; and

(*d*) By the employment of such other means as may from time to time be deemed expedient for that purpose; and

WHEREAS, The Medical Society of the District of Columbia has by resolution instructed its delegate to endeavor to secure the support of the American Medical Association both of the Minority Report of the

Committee on the Costs of Medical Care, and of the society's plan for promoting harmony of professional opinion and action on the socio-economic aspects of the practice of medicine;

Resolved, That the House of Delegates of the American Medical Association endorses the Minority Report of the Committee on the Costs of Medical Care as expressive, in principle, of the collective opinion of the medical profession; and, in order to clarify and harmonize the thinking of the individual members of the profession on the general subject of the said report, and on allied subjects.

Resolved, That the Board of Trustees be requested to undertake 'the sponsorship, direction and active participation by the American Medical Association in an intensive campaign to be conducted in cooperation with its constituent bodies for the purpose and along the lines indicated in the first paragraph of the preamble to this resolution. (58) (59)"

The subsequent portions of the proceedings show that that resolution was adopted by the House of Delegates.

TESTIMONY OF JOHN DONALD LAUX

DIRECT EXAMINATION

By Mr. Kelleher:

John Donald Laux was employed by the American Medical Association. His present address is Washington Boulevard Building, Detroit. He ceased employment in July 1939, after being employed with the American Medical Association four and a half years, from 1934 to 1939. He was a research assistant to Dr. Leland in the Bureau of Medical Economics. He had charge of studies in subjects such as insurance problems and various problems in medical economics, group hospitalization, handling correspondence concerning those matters. One of the duties was in connection with organized payments for medical service, and that involved medical service plans. He answered inquiries concerning various plans of that character, working directly under Dr. Leland.

Q.—I show you Government Exhibit 85 for identification, which purports to be a carbon copy of a letter written by you to Dr. John D. Sears, dated Feb. 26, 1937. Will you identify that as a copy of a letter which you wrote?

A.—That is correct.

Mr. Kelleher:—I offer Exhibit 85 in evidence (handing document to the court). And, your Honor, may I also offer at this time Exhibit 86 for identification, which purports to be a letter from John D. Sears to Dr. Morris Fishbein dated February 23, 1937, to which letter Exhibit 85 is the reply (handing document to the court).

Mr. Leahy (after a pause):—Is your Honor waiting for an expression?

THE COURT:—Yes.

Mr. Leahy:—Exhibit 86 I do not think is proper at all, your Honor. It is a letter of inquiry dated Feb. 23, 1937, directed to Dr. Morris Fishbein.

Mr. Kelleher:—It is offered solely to explain the reply, your Honor, and for no other reason.

Mr. Leahy:—There has to be some proof.

THE COURT:—How about 85?

Mr. Leahy:—If I could ask the witness just a couple of questions I would perhaps withdraw any objection.

THE COURT:—Very well.

By Mr. Leahy:

Q.—Did you talk with Dr. Leland about the contents of this reply or of this letter which you wrote on February 23?

The Witness:—I could not say whether or not as to that particular letter, I had conferred with Dr. Leland before the reply was made, but we had discussed types of replies of this nature as to the general content of the letter.

By Mr. Leahy:

Q.—But you do not know whether or not you discussed this particular letter of February 23 with him at all?

A.—No; prior to that, no, probably not. That would be my opinion.

Q.—You were just an employee, were you, in Dr. Leland's office?

A.—Yes.

Mr. Leahy:—I object to the offer as being against the A. M. A.

THE COURT:—I think there is one other question that would be pertinent. State whether or not the contents of this letter are in harmony with the views which you say Dr. Leland approved.

The Witness:—I believe that the contents of the letter are generally from the results of studies we had made, and most of those studies were conducted fairly independently. We obtained data from plans throughout the country.

THE COURT:—I do not think you quite got my question. In response to Mr. Leahy's question you said that although you did not know that this letter itself was written in collaboration with and with the approval of Dr. Leland, its general contents were of a nature which had been approved by him. I am not attempting to state your words, but that is the substance of what I gathered from your statement. Is that true?

The Witness:—I would not want to be certain on that, because he was a very vigorous taskmaster. Whether he would agree to every one of the statements, I would not say; but I think the general content was in accord with our conclusions as to the types of medical service plans. I don't know that he would agree with each one of the statements made.

By Mr. Kelleher:

Q.—When you say "our conclusions" whom do you mean?

A.—Mr. Simons and myself in conducting these studies would arrive at conclusions as to what the facts showed and would so interpret them. Frequently they were presented to Dr. Leland for his confirmation, and he would either agree or disagree that the facts should be so interpreted.

Q.—From your talks with Dr. Leland would you say that he approved of the substance of the letter giving your interpretations?

A.—I would say that he would tend to agree with the general implications of the letter; yes. Whether with the specific statements in the letter or not I do not know. I cannot recall an instance of that kind so far back.

THE COURT:—Did I understand you to say that this was the general type of letter which was sent in reply to inquiries of this sort?

The Witness:—Yes. That would be the general type of letter. We received inquiries from doctors asking for information about various types of plans, and we would give them replies usually pertaining to the particular plan.

THE COURT:—Was Dr. Leland familiar with this general type of letter which you were sending out?

The Witness:—Yes; that is true. He was generally familiar with the general type of letter we were sending out.

Mr. Leahy:—Is this offered as to Dr. Leland or as to the A. M. A.?

Mr. Kelleher:—Only as to the A. M. A.

THE COURT:—I think it is admissible.

Mr. Leahy:—I object to it as to the A. M. A.

THE COURT:—I think it is admissible as prima facie evidence against the American Medical Association. It may be explained, of course. If this gentleman was writing it without the approval or authority of Dr. Leland, and was expressing his own views, that may be shown. But prima facie it seems to me it is admissible against them. He was an employee and assistant to a general officer and he states that this does represent the general type of letter that was sent out with Dr. Leland's knowledge and approval concerning subjects of this sort. I think that is the substance of his testimony.

Mr. Kelleher:—Does that cover Exhibit 86, if your Honor please?

THE COURT:—I am speaking of Exhibit 85. I do not see the relevancy of 86.

Mr. Kelleher:—Your Honor, it shows—

THE COURT:—Yes; I know your explanation. But I do not think it is at all necessary, and I will sustain the objection to that. The letter is self explanatory.

Mr. Kelleher:—All right, your Honor.

The witness then identified letters as follows:

Letter 2/20/37 Laux to Sears
Letter 8/10/37 Laux to Palmer
Letter 11/30/37 Laux to Tibbals
Letter 1/12/38 Laux to Brown
Letter 12/8/37 Laux to Conklin
Letter 1/18/38 Laux to Christie
Letter 1/13/38 Christie to Leland
Letter 1/24/38 Laux to Hathaway
Letter 7/8/38 Laux to Rowe
Letter 7/6/38 Laux to Litman
Letter 7/12/38 Laux to Stanford

CROSS EXAMINATION

By Mr. Leahy:

Q.—Mr. Laux, you stated that you are employed in Detroit now?

A.—Yes.

Q.—In what capacity are you working?

A.—Director of Medical Service Plan; Michigan Medical Service.

Q.—Is that for the Michigan State Medical Society?

A.—Yes, it is a prepayment medical service plan sponsored by the Michigan State Medical Society.

Q.—And is that a constituent member of the American Medical Association?

A.—It is.

Q.—You are, or you were employed for four and a half years before that in Dr. Leland's office?

A.—Yes.

Q.—And your capacity or duties were such that you, when letters of inquiry were received you did the best you could to answer them?

A.—Yes.

Q.—And were many inquiries received?

A.—Yes, I believe the inquiries about medical service plans alone would constitute a thousand letters at least a year.

Q.—At least a thousand a year?

A.—Yes.

Q.—So that the letters which you were asked to identify represent but an extremely small proportion of the letters which you wrote?

A.—Oh, yes.

Q.—And in answering the letters did you collaborate personally with Dr. Leland?

A.—In only a very few instances was collaboration necessary, and that was usually a letter asking for some particular type of information for which we had not theretofore had inquiry.

Q.—And was its incoming mail quite voluminous?

A.—Yes, I believe the last year I was there the total volume was in excess of five thousand pieces. That is, answers out were five thousand.

Q.—And did the Bureau collect information generally about all kinds of practices of medicine throughout the United States?

A.—We conducted studies on various economic problems and plans by questionnaire, by personal investigation and by information sent in by physicians who were members of the American Medical Association. We collected a library on the economics of medicine, including these various plans, and prepared reports and published a brochure on these various topics.

Q.—And was that information solely for the medical profession, or was it for the public also?

A.—The public and the medical profession.

Q.—I notice on some of these letters that you have stated you are making enclosures of documents, "I am enclosing herewith"—let's take 101, that one you wrote to Dr. Stanford at Memphis, Tenn., where you said here, "Sent under separate cover," where you refer to certain documents, and informed him that these were being sent to him under separate cover. Did you send such documents?

A.—I presume so.

Q.—What was the nature of these documents in this particular case?

A.—That is a report which was prepared in the Bureau interpreting the principles of ethics of the medical profession in view of the economic problems which the profession faced, and indicating why adherence to such ethics was necessary, and their purpose.

Q.—And the Medical Service Plan. What would that be?

A.—It was a study of the various types of prepayment, various prepayment and postpayment plans, with a brief synopsis of such plans, their method and mode of operation.

Q.—There were many such plans?

A.—Yes.

Q.—How many?

A.—At one time I counted in excess of four thousand.

Q.—Throughout the country?

A.—Yes.

Q.—Those included prepayment and postpayment?

A.—Yes.

Q.—And what was this type of plan you refer to here?

A.—That was a plan or a study of a plan. That went through the county medical society; and the other organization it was a similar type set up with a little more in detail, regarding these various types of plans.

Q.—And also "contract practice," what was that?

A.—It was an analysis of a form of medical practice whereby doctors rendered service under contract to various organizations.

Q.—Would you say the Bureau had attempted to collect and distribute publicly in the shape of these studies and pamphlets a great many of such pamphlets or publications, of those which you enclosed were typical?

A.—Yes, in the years I was there there were thirty-five such reports, separate booklets, which were distributed as well as being contained in the pamphlet "Hygiene" which went to the doctors.

Q.—Were these reports which you collected and upon which you worked, Mr. Laux, in character or nature, a review of the various plans?

A.—Particular ones were, yes. For example, a recent report not mentioned there was the organization of medical service, which dealt with the various new types of development by prepaying medical service. It endeavored to analyze all the types of medical plans in existence in the country, to help persons to obtain medical service through prepayment or postpayment, or with the assistance obtained from government agencies.

Q.—Now, without taking up the time to go through these various letters which you have written, each one of those letters which you wrote and which you have just identified, were they prepared in good faith to supply information which you were asked to give?

Mr. Lewin:—I don't think they ought to be characterized in that fashion; they speak for themselves. The letters are going to be put in evidence.

THE COURT:—I think he may generally characterize or describe them; I think that will be fair. It doesn't negative anything that the letter itself says.

Mr. Lewin:—It seems to me to be—that they are the best evidence.

THE COURT:—He may state that generally without referring to any particular paper.

The Witness:—The answers to the letters and the reports which were prepared in the Bureau were always with the intention of conveying the facts, and in an endeavor to give the inquiring person information, accurate information, either adversely or favorably to what the type of plan inquired about was.

Q.—In other words, you, throughout your work in Dr. Leland's office endeavored to give accurate information in response to the letters which came to you and which you answered?

A.—Yes.

Q.—And your authority while you worked in the office of Dr. Leland was merely to answer these requests for information?

A.—Yes.

Q.—You didn't declare policy for Dr. Leland's office.

Mr. Lewin:—I don't think he ought to be asked a leading question.

Mr. Leahy:—On cross examination?

Yes.

Mr. Lewin:—Yes, on cross examination. This witness was an employee of the American Medical Association, and he is not such a witness that leading questions may be put to him on cross examination.

THE COURT:—Objection overruled.

By Mr. Leahy:

Q.—You had no authority to declare policies for Dr. Leland's office, did you?

A.—No, policies were decided on by the House of Delegates and the Board of Trustees of the American Medical Association.

Q.—Is that why you wrote in this particular letter,—I think it is Exhibit 89—that you wrote the last paragraph to emphasize what you have just told us?

A.—It is because frequently the requests would be received for information about types and plans which had not yet been brought before the House of Delegates and, consequently, it was necessary to say that "This information is given which you request and is confidential." We would advise them that until there had been received a full report concerning the plan and it had been acted upon by the House of Delegates we would be unable to take any official position with reference to the plan or type of practice.

Q.—And would you say in concluding, "Opinion is given merely as a business courtesy. No responsibility is to attach to the American Medical Association or its offices personally for the information herein given."?

A.—Yes.

Q.—Were you asked to produce these particular letters out of the many you wrote in a subpoena out of this court?

A.—The letters were taken from the files and photostatic copies were made of them. We weren't asked to locate any particular letters. I think the representative of the Department of Justice went through the files and took out what letters he thought were of interest to him.

Q.—And these particular letters which you have seen here were identified by you before?

A.—Yes, they were.

Q.—Can you give us any idea how many letters you wrote in the four and a half years?

A.—I judge about eight or ten thousand letters.

RE-DIRECT EXAMINATION

By Mr. Kelleher:

Q.—When did the prepayment plan with which you are now associated commence operation?

A.—In March, 1940.

Q.—In so far as the letters which have been offered through you criticize a particular plan, does that criticism expressed in these letters reflect the policy of the American Medical Association?

A.—The criticisms on the particular plans mentioned in those letters were in accordance with the policies advanced by the American Medical Association.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Let me be specific: let us take 89, which we had before. Wherever there is any expression of opinion contained in the letter is that expression given in accordance with what you stated in this letter of Nov. 30, 1937; that the opinion was given merely as a business courtesy?

A.—Yes, the endeavor was to give to the inquirer the facts as we had them in our files, that is about the particular type of medical plan. There was no particular reason other than that to give them the information as to what the plan was. If they asked whether such a plan was operating satisfactorily we tried to give them the information as we had obtained it through investigations or other information or data received through the members, or otherwise; often from those engaged in the plan or from members in the locality.

Q.—Now, you stated on the second page of your letter—the first page is an outline of the medical service plan at Trinity Hospital at Little Rock, Ark., is it not?

A.—Yes.

Q.—Now, where did you get your information about that?

A.—We had a rather complete report of some 48 pages made by an investigator who was there to study the plan.

Group Health Association, Inc. at Washington:—"The enclosed article prepared by Dr. Woodward, would probably give the information you want. As you know this Association was discussed rather extensively at the Secretary's Conference" and the Hospital Guild, where did you get that? The Economy; and the Bassett; the Thompson Benefit Association, Brattleboro, Vermont: Where did you get your information about those?

A.—The Bassett Plan published a report on its experience over a period of three or four years. In addition we have considerable correspondence pertaining to it. The Economy was a rural medical plan; we had a number of pieces of correspondence from the doctor who was formerly in charge of that plan, and from others in the society. The Thompson Benefit Association, Brattleboro, was a hospital service and a surgical insurance plan; they published a number of, two or three reports, over those years that we had received.

Q.—And is that what you enclosed when you stated, "The enclosed outline of those plans" was going forward?

A.—Yes, that was a kind of synopsis of the plans and reports which we prepared to make the information more readily available to the inquiring person.

Q.—And you added, "There are several other plans of a similar type, but as a general rule they do not provide the complete services claimed nor are they solely supported by dues collected from the members.

"A number of independent services have agreed that medical services cost an average of not less than $100 per family, or $25 per person. It is inconceivable that any insurance or prepayment plan can provide the same services for lower average charges. Either the services are not as complete or the quality of the services is impaired. Frequently the members who ask for services are given the complete run of the mill which always entails special charges for special services. It is also not uncommon to find that dues and special charges are insufficient to support the plan and that the deficits are made up from profits derived from extra activities, such as soda fountain, magazines, or direct sales.

"Income from non-members is also an important financial item.

"This information is given which you request and is confidential. Opinion is given merely as a business courtesy. No responsibility is to attach to the American Medical Association or its officers personally for the information we have given."

Were those comments based upon service reports you had, and which were read and studied by you?

A.—Yes, they were an analytical study of those plans.

Q.—Are those comments, whether critical or otherwise, based upon what those studies show?

A.—They were based upon studies of these plans.

Q.—And do you think that while you were there that you studied plans for the distribution of medical care which would run up into the thousands?

A.—Yes, that is certainly true.

TESTIMONY OF HATTIE A. NIEHOFF

DIRECT EXAMINATION

By Mr. Kelleher:

Hattie A. Niehoff said she had been employed by the American Medical Association about a month less than twenty-seven years and, in response to the question as to her position during the last ten years, stated that she was secretary to Dr. Olin West.

Miss Niehoff then described the filing system and identified exhibits as follows:

Letter 6/22/37 Hendricks to West
Letter 6/28/37 West to Herbst
Letter 6/25/37 West to Herbst
Letter 10/7/37 Conklin to Fishbein
Letter 10/19/37 West to Conklin
Letter 10/14/37 West to Conklin
Letter 10/9/37 Conklin to West
Letter 10/29/37 West to Tibbals
Letter 11/6/37 West to Tibbals
Telegram 11/4/37 West to Hooe
Telegram 11/5/37 Hooe to West
G. H. A. Conference 11/6/37
Letter 11/9/37 West to Hooe
Letter 11/9/37 West to Wall
Letter 11/16/37 West to Wise
Letter 2/24/38 West to Talley
Telegram 4/21/38 West to Talley
Letter 5/5/38 West to Coole
Letter 5/5/38 West to Follansbee
Letter 9/21/38 West to Erskine
Letter 10/8/38 West to Erskine
Letter 10/12/38 West to Hammerly
Pages 295, 296, 297 of minutes of Judicial Council
Pages 17, 18 of minutes of Judicial Council
Pages 156, 157 of minutes of Judicial Council
Minutes Judicial Council 11/12/37
Letter 1/31/35 West to McLean
Letter 2/6/36—West to Freiberg
Letter 3/18/36 West to Freiberg

Q.—I also show you Exhibit 145 for identification and ask you to identify that as the opinion of the Judicial Council of the American Medical Association in the case—of appeal to the Judicial Council in the case of Dr. A. L. Curtin et al.

A.—It so appears to be.

Q.—Does this Government Exhibit 145 bear the signatures of members of the Judicial Council at that time?

A.—My memory isn't quite so good so far back, but Dr. O'Shea, Dr. Donaldson, Dr. Cunniffe and Dr. Follansbee are yet members of the Judicial Council.

Mr. Kelleher:—I offer in evidence Government Exhibit 144 and Government Exhibit 145.

THE COURT:—This is the original finding, is it?

Mr. Kelleher:—She so identified it as the opinion of the Judicial Council.

THE COURT:—Any objections?

Mr. Leahy:—Yes, your Honor. Objections to both of these. One goes back to 1932, Oct. 19, 1932. It purports on the subject to be a decision by the Judicial Council, but there is nothing in the decision purporting to set forth the facts or to acquaint anybody with the basis of the decision. It is back in 1932, and I think the evidence already is in the case that the change in the policy of the A. M. A. was made in 1934, so that this decision if it were admissible under any ground would have been one rendered under entirely different conditions.

THE COURT:—Well, I will have to study it.

Mr. Leahy:—This is a mere decision of the Judicial Council. The members of the Judicial Council are not named here in any way. They all have their signatures here.

THE COURT:—They signed it?

Mr. Leahy:—They signed it. They are not indicted.

THE COURT:—It all relates to the same matter, doesn't it?

Mr. Kelleher:—Yes, your Honor, it does.

THE COURT:—I imagine if one is overruled, the other is, so I will confine it.

FEBRUARY 14, MORNING

Mr. Richardson:—May we approach the bench?

THE COURT:—Yes.

(Counsel for both sides approached the bench and conferred with the Court.)

TESTIMONY OF LILLIAN LEACH

Mr. Kelleher:—Do I understand, Mr. Leahy, that the authenticity of Government Exhibits 147, 149, 150 and 151 for identification is conceded?

Mr. Leahy:—Yes, your Honor, we make no objection to the form of proof on that ground.

Mr. Kelleher:—I offer in evidence Government's Exhibits 147, 149, 150 and 151; and at the same time I offer in evidence Government's Exhibit 148, which purports to be a letter from Dr. Follansbee to Dr. Olin West dated April 27, 1938.

. . . . . .

THE COURT:—I understood Dr. Follansbee to be an officer of the American Medical Association.

Mr. Kelleher:—Yes, he is chairman of the Judicial Council.

THE COURT:—Now, 151. Who is Dr. Anderson?

Mr. Kelleher:—Dr. Anderson; he is assistant to Dr. Holman Taylor, who was the secretary of the Texas State Medical Society.

THE COURT:—What about 151, Mr. Leahy?

Mr. Leahy:—That is objected to, if your Honor please, because it is—

THE COURT:—I will take it up later. Now, 150.

Mr. Leahy:—That is objected to, if your Honor please.

. . . . . .

THE COURT:—I don't think that you will even have to give your name.

TESTIMONY OF IDA LEACH CASCIO

DIRECT EXAMINATION

Ida Leach Cascio said she has been employed by the American Medical Association a little over fifteen years in Dr. West's office as a stenographer.

Mr. Kelleher offered eleven exhibits for identification.

TESTIMONY OF A. M. SIMONS

DIRECT EXAMINATION

A. M. Simons said he has been working in the Bureau of Medical Economics, American Medical Association, under Dr. Leland since May 1932.

He was asked to verify eight exhibits produced by the American Medical Association in response to a subpena in this case.

CROSS EXAMINATION

By Mr. Leahy:

Q.—What were your duties in Dr. Leland's department, please?

A.—Largely research work, but a certain amount of correspondence besides.

Q.—What is the character of the research work you would do?

A.—Making studies, for instance, beginning with compensation; then with other various problems in medical economics; factual studies.

Q.—Did those studies take your attention all over the United States? I mean in the subject matter of your studies, did you include the entire United States?

A.—Yes.

Q.—How many other workers were there in the bureau while you were there?

A.—When I came, I think there were only three.

Q.—And now?

A.—This recent preparedness work has brought in ten or fifteen.

. . . . . .

Q.—Isn't it a fact that your bureau had collected a vast amount of data with reference to all matters concerning medical economics?

A.—Yes.

Q.—And are those preserved in the bureau for the information of anybody who asks for that information?

A.—Yes.

Q.—Does that include the general public as well as the members of the profession?

A.—Yes.

Q.—How many inquiries would come in in the course of a year, to your bureau?

A.—Well, I would say three or four a day, that I handled.

RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—You said that you discussed these reports after you made them? With whom did you do that?

A.—Dr. Leland.

Q.—And as regards the correspondence which you just looked at, and which has been offered in evidence while you have been on the stand, will you tell us whether, when you made any expressions of opinion in those letters, you were expressing the policy of the A. M. A., as you understood it?

A.—Yes.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Did you have any authority to make any policies yourself?

A.—I was told no one had authority to make policies except the House of Delegates.

. . . . . .

Q.—Isn't it a fact that so many letters came over the desks of the Medical Economics Bureau of the American Medical Association that it would be impossible for Dr. Leland to review every reply or even read every letter of inquiry?

A.—Certainly.

Mr. Lewin:—And for that reason when you expressed opinions in those letters you made them conform with what you believed to be the policies of the A. M. A., from your discussions with Dr. Leland?

The Witness:—And from my reading of the proceedings of the House of Delegates.

TESTIMONY OF BESS T. MC DONALD

Bess McDonald said she had been employed by the American Medical Association for sixteen years as secretary to the director of the Bureau of Legal Medicine and Legislation. She identified exhibits 177 through 192.

TESTIMONY OF ALICE MILLER

DIRECT EXAMINATION

Mrs. Alice Miller, a stenographer, said she had worked for the Bureau of Legal Medicine and Legislation of the American Medical Association about eleven years; in 1937 under the direction of the defendant, William C. Woodward. She identified exhibits 193-197.

TESTIMONY OF DOROTHY CRIDLAND

DIRECT EXAMINATION

Dorothy Cridland was employed by the American Medical Association from the spring of 1931 until October 1937 in the office of William C. Woodward. She identified exhibits 198 to 203.

TESTIMONY OF WINNIFRED WELTON

Winifred Welton was stenographer for Dr. William C. Woodward. She identified exhibit 204.

TESTIMONY OF KATHRYN HARTENBURG FORD

Kathryn Hartenburg Ford said she was a stenographer for the Council on Medical Education and Hospitals, working for Dr. William D. Cutter. She identified exhibits 205-208.

TESTIMONY OF ALYCE BUCKLEY TURBUSH

Alyce Buckley Turbush said she was a stenographer in the Council on Medical Education and Hospitals. She also took dictation in 1938 from Dr. F. H. Arestad a hospital inspector. She identified exhibits 209-214.

TESTIMONY OF MARGARET WILSON

Margaret Wilson is employed with the American Medical Association as a stenographer. She identified exhibits 215-217. She also took dictation from Dr. C. M. Peterson a hospital inspector in the Council on Medical Education and Hospitals.

TESTIMONY OF MILDRED HANSON CARGILL

Mildred Hanson Cargill was a stenographer at the American Medical Association for the Council on Medical Education and Hospitals. She took dictation from Drs. William D. Cutter and C. M. Peterson. She identified exhibits marked 218 through 234.

TESTIMONY OF DOROTHY ERNSTING

Dorothy Ernsting was employed by the American Medical Association, as stenographer and typist for the Council on Medical Education and Hospitals. She identified exhibits 235 to 246.

TESTIMONY OF MARY A. MC GOVERN

Mary A. McGovern was stenographer to the Council on Medical Education and Hospitals. She identified exhibits 247-255.

TESTIMONY OF CAROLINE CHRISTOPHER

Miss Caroline Christopher was a stenographer in the employ of the American Medical Association Council on Medical Education and Hospitals. She took dictation from Dr. Peterson. She identified exhibit 256.

TESTIMONY OF DOROTHY PECHMAN TURNER

Dorothy Pechman Turner was employed with the American Medical Association from 1934 through 1939 as secretary to Dr. Leland in the Bureau of Medical Economics.

Q. Who is A. J. Cramp?

A. Dr. Cramp was formerly Director of the Bureau of Investigation.

The witness identified exhibits 259-280.

TESTIMONY OF CATHERINE E. JOHNSON

Mrs. Catherine E. Johnson was a stenographer in the Bureau of Medical Economics. She identified exhibits 257 and 258.

TESTIMONY OF ZITA WIST

Zita Wist testified that she was Dr. Fishbein's secretary in 1937. She identified exhibits 281, 282 and 283.

TESTIMONY OF RHEA H. SMITH

Rhea H. Smith is secretary to Dr. Fishbein. She identified exhibits 284-290 and 297 A.

RE-DIRECT EXAMINATION

Mr. Lewin:

Q. When Dr. Fishbein would send a communication to Dr. West or Dr. Woodward, or others of his associates in the American Medical Association for reply, was it his practice to indicate what the nature of the reply should be?

A. Well, I don't think so; he would probably give a suggestion; and sometimes he didn't.

Q. Sometimes he did and sometimes he didn't?

A. That is right.

RE-CROSS EXAMINATION

Mr. Leahy:

Q. What was Dr. Fishbein's business at the time you worked for him?

A. Editor of THE JOURNAL.

Q. He was editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION?

A. Yes.

Q. Did you know Dr. Leland?

A. Yes.

Q. Did you know Dr. Cutter?

A. Yes.

Q. Each one of those men headed distinct and separate departments, did they not?

A. Yes.

Q. And was it not the practice of Dr. Fishbein, where any communication was addressed or directed to him, where it should have been referred to some one else, that he refer it by an interoffice communication?

A. Well, sometimes it would be handled this way: The letter would be acknowledged and the original letter plus the copy of the reply would be sent to whoever handled that particular work. No memorandum would accompany that; he would simply write the name of Dr. West or Dr. Leland or Dr. Woodward on it, and it would go over with the copy of the reply which we had sent to the person making the inquiry or who had written the letter.

Q. You don't mean to indicate that Dr. Fishbein would tell Dr. West, Dr. Cutter or Dr. Leland how they should dispose of the matter, do you?

A. No. I would write the letter of reply, and the carbon copy which we would forward to whomever it was sent to by interoffice communication would be accompanied by the original letter. No memorandum would accompany the letter and reply.

Q. How many secretaries worked there for Dr. Fishbein to keep up with the mail?

A. Three.

FEBRUARY 14, AFTERNOON

Following recess, the court assembled with the attorneys for the government and for the defendants to consider the admissibility into the evidence of some of the exhibits which had been submitted during the morning session and previously. Inasmuch as this material was presented in the absence of the jury, it cannot be published until the completion of the trial. Those documents which were admitted will be read to the jury and will be published as part of the proceedings.

FEBRUARY 17—MORNING

The Court resumed session and spent the entire day in discussing the admissibility of some of the letters involved in the case, and of the minutes of the District of Columbia Medical Society. As the arguments between the attorneys on these points were held in the absence of the jury, this material is not available for publication in THE JOURNAL. Such material as was admitted by the Court will, of course, be presented by the attorneys in the course of the presentation of the case.

FEBRUARY 18—MORNING

When Court resumed, the jury was again dismissed and attorneys argued before the Court over the admission of the minutes of the Board of Trustees of the American Medical Association and of the minutes of the Judicial Council of the American Medical Association.

FEBRUARY 18—AFTERNOON

The court ruled that minutes could be introduced in evidence and it was for the jury to say after argument pro and con whether they would prove what is alleged or whether they do not.

TESTIMONY OF COL. GLEN I. JONES

DIRECT EXAMINATION

By Mr. Lewin:

Glen I. Jones stated he is a surgeon employed by the Southern Railway, on a salary. Before that he was in the Medical Service of the United States Army. He entered the service in 1909 with rank of first lieutenant and retired from the service in July 1936 with the rank of Colonel. In the Army he was compensated by rates of pay prescribed by law, on a salary basis. The Medical Service of the United States Army has a special attitude toward preventive medicine which includes the control of sanitary and other conditions which would preclude the occurrence of epidemics of diseases, principally; study of its personnel so as to discover any evidence, any symptoms or manifestations which might suggest the presence of disease among its personnel. It includes periodical physical examinations and checkups.

Q.—In the spring of 1937, were you offered the post of medical director of Group Health, Inc.?

A.—I was.

Q.—Who first suggested the employment?

A.—I had been suggested to officials in the Home Owners Loan Corporation with respect to my being a candidate for that position.

Q.—Do you know who made that suggestion?

A.—I think the Surgeon General of the Army, General Reynolds, although he might have had associated with him other officers or officials.

Q.—And to whom was the suggestion made? Can you tell us the names of the individual or individuals in the Home Owners Loan Corporation?

A.—To Mr. Zimmerman, I believe.

Q.—Did you signify to either of these gentlemen that you might be interested in the job?

A.—Well, at first I don't think that entered into it. The proposition was put to me; I was asked by Mr. Zimmerman and Mr. Penniman to make a study of it and report to them, tell them how it might be done.

Q.—And when was your first interview with them?

A.—In the month of March; the precise date I don't recall.

Q.—And where did this interview first take place?

A.—In Mr. Zimmerman's office in the Home Owners Loan Corporation.

Q.—What did Mr. Zimmerman tell you of the proposition?

Mr. Leahy:—I object; hearsay.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—What was the proposition you were asked to take?

A.—The first proposition that was put up to me was how physicians might be organized to give medical attention to subscribers in an organization in the H. O. L. C., on the basis of insurance or prepayment for medical attention.

Q.—And who put that proposition up to you?

A.—Mr. Zimmerman and Mr. Penniman jointly.

Q.—Did the proposition include the establishment of a centrally located clinic?

Mr. Leahy:—I object to it; it is leading and, secondly, violative of the hearsay rule.

THE COURT:—I think that is a good objection.

By Mr. Lewin:

Q.—Was anything said to you about the establishment of a clinic in connection with the establishment of this plan?

Mr. Leahy:—The same objection, hearsay.

THE COURT:—Yes.

By Mr. Lewin:

Q.—What other features of the plan were present as first explained to you?

Mr. Leahy:—The same objection. Hearsay.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—How long a period of time did you negotiate with these gentlemen?

A.—About two or three months.

Q.—And when the proposition was made to you, what post was offered to you?

A.—To organize and direct the operations of the medical unit which might be organized.

Q.—What salary was discussed for you?

A.—They spoke of $10,000 a year; I don't know whether that was a direct offer, because the development did not materialize.

Q.—And was any statement made to you as to the duties you were expected to perform?

Mr. Leahy:—I object to that as hearsay.

THE COURT:—Sustained.

By Mr. Lewin:

Q.—What duties were you expected to perform in connection with this offer?

A.—To organize the unit and operate it.

Q.—Were you to be the only doctor, or were other doctors to be assistants to you?

A.—I was to organize the unit of physicians.

Q.—And how were those physicians to be compensated?

A.—On a salary basis; as far as we went.

Q.—What was your inclination toward that offer?

Mr. Leahy:—Objected to.

THE COURT:—Sustained.

By Mr. Lewin:

. . . . . .

A.—This offer of the directorship was not made to me until I had drawn up some plans at the request of Mr. Zimmerman and Mr. Penniman how such a prepayment plan might be operated.

Q.—Will you describe the plans that you drew up?

A.—I studied and submitted to them three plans.

Q.—What were they?

A.—The first plan was the organization.

Mr. Leahy:—Is this all material and relevant, these plans that he studied?

THE COURT:—I don't know.

Mr. Lewin:—Certainly it is.

Mr. Kelleher:—It will appear in just a few minutes; its relevancy and materiality will appear in a few more questions.

Mr. Leahy:—Were they in writing? If so, let us have them. It would be the best evidence.

Mr. Lewin:—He knows the fact. What could possibly be better than his knowledge? What objection is there to having the jury hear it from him?

Mr. Leahy:—That is not the question. There is a right way and a wrong way.

Mr. Lewin:—And we do not propose to learn the right way in a school conducted here by defense counsel.

Mr. Leahy:—I can't see how the plans studied and submitted by the colonel are material.

THE COURT:—The question as to what was adopted; only that plan is relevant.

Mr. Lewin:—We are going to prove that this witness never accepted the job, and give the reasons why he did not. It is charged in the indictment.

THE COURT:—Well, go to it, but let us get to that point.

By Mr. Lewin:

Q.—Will you describe the plans which you suggested?

Mr. Leahy:—I still object. I think it is entirely incompetent, irrelevant, and immaterial.

Mr. Lewin:—I am entitled to show the scope of these plans. If you will wait until this witness testifies, you will see the materiality. You are a wonderful witness yourself but I would rather have him testify at this time.

Mr. Leahy:—The objection is to the point that this witness says he studied and submitted three plans. What have we to do with that?

THE COURT:—I will rule that the plans submitted are not relevant. Perhaps it may be relevant to show that the plan adopted is relevant. If your purpose is to prove he had this offer and was restrained from accepting it, for one reason or another, go ahead and prove it. Let's proceed the way I have suggested.

By Mr. Lewin:

Q.—Describe the plan that you were to be medical director of in these discussions.

A.—There was no plan adopted.

Q.—What was the plan that was considered?

Mr. Leahy:—Objected to as immaterial; it was not adopted.

THE COURT:—I don't think you understand me. Will you step up here.

(Counsel for both sides approached the bench and conferred with the Court).

By Mr. Lewin:

Q.—Did you have occasion to consult anybody else about these plans except the members of the H. O. L. C.?

A.—Not specifically about the plans, but in general, about the project, I did.

Q.—Whom did you consult?

A.—The organization of this unit I felt to be successful, that is, to give the proper service to the people who might subscribe, must be the best that we could procure, among the profession in the District of Columbia. I therefore felt that I should canvass representative men of the Medical Society of the District of Columbia and determine whether I would get their support.

Q.—Whom did you see?

A.—I saw several members of the District Medical Society whose judgment I respected.

Q.—Did you see any of the defendants in this case?

A.—I don't know who the defendants are.

(The witness testified he saw Dr. Arthur C. Christie, Dr. Thomas A. Groover, Dr. Charles Stanley White.)

A.—Individually I do not recall any others. I saw others collectively by invitation later.

Q.—What did Dr. Christie say to you?

A.—He indicated his disapproval of the project.

Q.—What did he say? Do you remember?

A.—Oh, not specifically; no. In general he said that they were opposed to it—the District Medical Society was opposed to it, and we could not expect their support; that members of the medical profession of the District of Columbia who might be invited to join such a unit and did join it, could not expect to continue with the District Medical Society nor could we expect the members of the medical profession in the District would consult with members of such a group.

Q.—Did these other doctors whom you talked to take a similar position?

A.—They did.

Q.—What effect did their observations have upon you?

Mr. Leahy:—I object as immaterial.

THE COURT:—Colonel, were you a member of the Medical Society?

The Witness:—Not of the District Medical Society; no, sir.

THE COURT:—I think you may answer the question.

The Witness:—Will you state it again?

(The pending question was read by the reporter as recorded.)

A.—It made me skeptical about the success of the prepayment plan, with that unit.

By Mr. Lewin:

Q.—Did you report back to Mr. Zimmerman and Mr. Penniman?

A.—I did.

Q.—Why were you skeptical of the success of the plan then?

A.—Because I felt that such a unit should be composed of the very best that could be procured from among the medical profession of the District of Columbia, in honesty to the subscribers.

Q.—Did you have any opinion about the success of the enterprise if the District of Columbia Medical Society withheld its cooperation?

A.—Not immediately. I felt that there was a breach there that probably might be closed by communications between the H. O. L. C. representatives and the District Medical Society.

By Mr. Lewin:

Q.—What effect did it have upon the continuation of the idea?

Mr. Leahy:—I object to that. It would be necessarily a conclusion.

THE COURT:—Yes. I think you might ask him what, if any, effect it had upon his further connection with the matter.

By Mr. Lewin:

Q.—I will adopt his Honor's question. What effect, if any, did it have upon your further connection with the matter?

A.—At that time, none. It prompted Mr. Zimmerman and Mr. Penniman to call a meeting of the Surgeon Generals of the several services who they, Zimmerman and Penniman, had reported as giving a green light on this project. When I say a "green light" I mean in a general way.

Q.—Who were those Surgeon Generals?

A.—General Rossiter of the Navy, General Cummings of the Public Health Service, General Reynolds of the Army, and the Commissioner of Health of the District of Columbia, Dr. Ruhland.

Q.—Was this meeting held?

A.—It was.

Q.—Where was it held?

A.—In the apartment of Mr. Zimmerman.

Q.—Who else attended except the three Surgeon Generals and the Health Officer?

A.—Mr. Zimmerman and Mr. Penniman.

Q.—And yourself?

A.—And a representative of the Twentieth Century Foundation.

Q.—Do you remember his name?

A.—I do not.

Q.—What transpired at this meeting?
Mr. Leahy:—I object as immaterial.
THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Were any decisions arrived at at the meeting?
Mr. Leahy:—I object as immaterial.
THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Did you make any suggestions as to what to do next?
Mr. Leahy:—I object as immaterial.
THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—What did you do as the result of the discussions at the meeting?

A.—That was the beginning of my withdrawal from participation in the project. However, I was invited to attend a meeting of the District of Columbia Medical Society shortly after that.

Q.—Was that meeting held in a doctor's office?

A.—No; in the building of the District of Columbia Medical Society.

Q.—Did you before that time attend a meeting in Dr. William Gerry Morgan's office?

A.—I did.

Q.—Who was present?

A.—I can tell you in part; probably not as to all of them. Dr. Gerry Morgan, Dr. Macatee—

Q.—Dr. Henry Macatee?

A.—Yes; Dr. Prentiss Willson—

Q.—That is, the defendant Prentiss Willson in this case?

A.—I don't know the defendants in this case, sir. Dr. Verbrycke; probably one or two others that I do not recall.

Q.—What transpired at that meeting?

A.—I was interrogated about the proposed medical project in the H. O. L. C., and it was discussed.

Q.—What opinions did you express?

A.—I think I expressed the opinion that the medical profession should take hold of a project somewhat like this and organize it and lead it.

Q.—What decision, if any, was arrived at?

A.—There was not any reached, so far as I know.

Q.—You say after that you attended a meeting of the Executive Committee of the District Medical Society?

A.—I did; yes.

Q.—Did you speak at that meeting?

A.—I did; yes. I did not give an oration. I made some comments and answered some questions.

Q.—I show you an excerpt from the minutes of the meeting of the Executive Committee of the Medical Society of the District of Columbia held on Tuesday evening, June 1st, 1937, which shows that you were present by invitation, and I will ask you to read that excerpt, if you will.

Mr. Leahy:—I think if he has a recollection of the meeting he can give it.

Mr. Lewin:—I would like to know whether these minutes are substantially accurate or not.

Mr. Leahy:—You cannot prove that by his reading them.

A.—(After examining document referred to) Why, in substance, yes. There is one part there that I don't understand at all.

By Mr. Lewin:

Q.—Will you point that out?

A.—Yes. This part (indicating), "he told them"—"frankly that if the Medical Society of the District of Columbia disapproved their efforts that there would not be any available medical assistance that could be depended upon." I don't know what that means at all.

By Mr. Lewin:

Q.—Did you decline the medical directorship as a result of this conference?

A.—I did.

Q.—Did you state your reasons for doing so?

A.—Yes.

Q.—What were those reasons?

Mr. Leahy:—To whom were they stated?

Mr. Lewin:—I want to know what the reasons were.

Mr. Leahy:—Ask him that.

Mr. Lewin:—I have asked him that.

Mr. Leahy:—I object as immaterial.

THE COURT:—Objection overruled.

A.—I gave as my reasons that—first of all, I indicated that I held the opinion individually that there was a wage group who could be better cared for if a better arrangement were made for medical attention to that group.

By Mr. Lewin:

Q.—What was the better arrangement?

A.—There are a number of them.

Q.—Which was the one that you preferred and recommended?

A.—I don't know that I had any choice of the three. I made a recommendation to them for theirs, but for a general organization to affect all people who might need medical attention I had another view.

Q.—I did not ask you about that. I asked you what the plan was that you said you preferred, that you thought would help these people with a certain income. What was it?

A.—I had no plan, myself. I say I had an opinion.

Q.—Let us have that opinion. What was your opinion as to a plan that would help that group?

A.—I had no specific plan. It was any one of three or four that I can state to you.

(The witness was again asked why he refused the directorship. Defense counsel objected to the nature of the question.)

THE COURT:—Objection sustained. Go back to that same question. You got off of that. The question was, what reasons did he have for declining the directorship?

The Witness:—My reasons for declining the directorship were that I felt that such a project, if engaged in, should be composed of the best that could be produced in the medical profession and be guided by the people who represented the best interests in the medical profession.

By Mr. Lewin:

Q.—Why did you decline? Did you find that that could not be done?

A.—I felt so.

Q.—Why did you feel so?

A.—For obvious reasons.

Q.—What were those obvious reasons?

A.—That the District Medical Society or individuals in the District Medical Society had indicated their unwillingness to proceed and had indicated that they would not consult with the group, which automatically denied to the unit the best that the medical profession had to offer in the city of Washington.

Q.—I show you what purports to be a letter from M. W. Ireland to Dr. William D. Cutter, dated March 27, 1937. I ask you to look at that letter, if you will. Who was General Ireland?

A.—He was an ex-Surgeon General of the Army.

Q.—Do you know whether or not General Ireland had held any position with the American Medical Association?

A.—I think he was a member of the Council on Medical Education.

Mr. Lewin:—I ask that this be marked as an exhibit (handing a paper to the reporter).

(Letter dated March 27, 1937, from Ireland to Cutter, was marked U. S. Exhibit No. 295 for identification.)

By Mr. Lewin:

Q.—I would like you to read that letter over to yourself. I want to ask you a question or two about it.

Did you ever state to the Surgeon General or to General Ireland the things which are attributed to you there?

Mr. Leahy:—We object. I do not know what he is trying to do—impeach the letter or impeach his own witness.

Mr. Lewin:—I am trying to get at the fact.

THE COURT:—The letter is in without objection. Under those circumstances, if Colonel Jones is familiar with it I see no objection to his being asked about any incident that relates to him or any statement which relates to him.

By Mr. Lewin:

Q.—Let me read you this. It says:

"After this visit"—

Speaking of your visit—

"with the men from the Home Owners Loan Corporation, which lasted for a period of two or three hours, Jones telephoned to the Surgeon General to the effect that this was nothing but an entering wedge to the establishment of state medicine." Did you state that to the Surgeon General?

A.—I made some observations which were not as positive or direct as stated by General Ireland in connection with that, in that particular, both to General Ireland, General Reynolds and all of the members of the group, all of the generals who met with the District Medical Society collectively and individually.

Q.—Did you state that in your opinion what you were asked to head was nothing but an entering wedge to the establishment of state medicine?

A.—Not in those terms.

Q.—Did you say that in substance?

A.—I made this observation substantially as follows, that I felt the medical profession had a job to do in providing some way to take care of a prepayment plan—

Mr. Leahy:—Pardon me, Colonel. I do not like to interrupt you, but I submit that that is not proper, if your Honor please.

THE COURT:—Are you objecting to it?

Mr. Leahy:—Yes, sir.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Did you say this? Did you say to anybody that you were dropping this plan like a hot cake, as early as March 27, 1937?

A.—No.

CROSS EXAMINATION

By Mr. Leahy:

(Colonel Jones recapitulated the record of his career.)

Q.—Did you do any private practice of medicine after you retired?

A.—Yes, I did, for three or four months, in an institution.

Q.—What institution was that?

A.—The North Shore Health Resort.

Q.—You were asked a question whether or not you were interested in preventive medicine. Do you recall that question?

A.—I do.

Q.—Could you tell the jury in general what the phrase "preventive medicine" means?

A.—Yes. Preventive medicine means proper care as to ventilation, disposal of waste, the care of streets and grounds, the early recognition of individual cases of infectious diseases, the inspection and preservation and proper care of food, the testing and care of water supplies and similar things.

Q.—Doctor, is it not a fact, from your experience, that all reputable doctors are interested in preventive medicine?

A.—Without question.

Q.—You are a member of the A. M. A., are you not?

A.—I am.

Q.—And is it not a fact that over a period of years, so far as you have been a member, and longer, the members of the American Medical profession have been very generally interested in preventive medicine?

A.—Actively.

Q.—How many years have you been a member of the A. M. A.?

A.—I think, all my service, ever since I became a doctor.

(The witness stated he had known Drs. Christie, Groover, Macatee and Verbrycke for twenty-five to thirty years.)

(He had known Dr. Morgan and he had known Dr. C. S. White for thirty-seven years.)

Q.—And you had confidence in the judgment of those men, did you?

A.—I did.

Q.—And that is why you went to chat with them?

A.—I did—that is the reason.

Q.—Did you consider that those men whom you met were the outstanding or some of the outstanding physicians of the District of Columbia?

A.—I would identify them as such; yes.

Q.—Did you explain to them or talk to them with reference to your own plan?

A.—I don't think I talked about any plan that I had to anybody except Mr. Zimmerman and Mr. Penniman. It was prepared for them as ways in which the project they had in mind might be accomplished. I put it in their hands, and so far as any specific plan that I had, I think I kept that with myself after I communicated it to them. That was the job they gave me to do and I did it, and I did not discuss it.

Q.—You did not discuss that plan with any of the doctors whose names we have mentioned?

A.—No; I did not.

Q.—Did you discuss the matter with General Ireland?

A.—My plan? No; I did not.

Q.—Did you discuss the fact that you had chatted with any one from the H. O. L. C., with General Ireland?

A.—I did, and with all of the other doctors.

Q.—Do you recall about when it was you chatted with General Ireland about that?

A.—Any number of times during the period that the thing was under consideration.

Q.—Do you think you talked with General Ireland at or about the time the General wrote this letter?

A.—I may have. If General Ireland says I did, I did.

Q.—The General says:

"At the early part of the week a couple of men from the Home Owners Loan Corporation visited the Surgeon General of the Army to say that they wanted to obtain the services of a doctor to look out for the health of their personnel, which incidentally is quite large. After the consultation the Surgeon General asked Colonel Glen Jones, a retired medical officer, to visit these people."

Did General Ireland request you to visit them?

A.—No.

Mr. Lewin:—It does not say he did. It says the Surgeon General did.

By Mr. Leahy:

Q.—Who was the Surgeon General?

A.—General Reynolds.

Q. (Reading)—"After this visit, which lasted for a period of two or three hours"— Do you think the visit lasted that long?

A.—I think so; yes.

Q. (Continuing reading)—"Jones telephoned to the Surgeon General to the effect that this was nothing but an entering wedge to the establishment of state medicine, and so far as he could make out, the Twentieth Century Foundation Corporation of New York City was going to pay the expenses of this so-called medical care for the personnel of H. O. L. C." Do you recall telling the Surgeon General that?

Mr. Lewin:—That is a double-barreled question. There are two things there that he said he told them.

Mr. Leahy:—Very well. We will pick them apart.

By Mr. Leahy:

Q. (Reading)—"After this visit, which lasted for a period of two or three hours, Jones telephoned to the Surgeon General to the effect that this was nothing but an entering wedge to the establishment of state medicine." In substance did you tell the Surgeon General that?

A.—No. I made a report to the Surgeon General, since he had sent me to the H. O. L. C., on my observations and my opinion, but it was not like it is stated in that letter.

Q.—Was it words in substance, or was the thought in substance that you expressed to the Surgeon General, that it was an entering wedge to the establishment of state medicine?

A.—Not that way; no.

Q.—Whether in those words or not, was that the thought which you expressed to the Surgeon General?

A.—No.

Q.—There was no thought about state medicine concerned in it?

A.—There was.

Q. (Reading)—"So far as he could make out, the Twentieth Century Foundation Corporation of New York City was going to pay the expenses of this so-called medical care for the personnel of the H. O. L. C." Did you mention that to the Surgeon General?

A.—Not in those terms. I mentioned the Twentieth Century Foundation; yes.

Q.—And your information at that time was that the Twentieth Century Foundation was going to pay the expenses of the so-called medical care for the personnel of the H. O. L. C.?

A.—I qualify that—that the Twentieth Century Foundation was interested in supporting it.

Q.—Financially?

A.—Well, I don't know about that. Nothing was ever said to me about financially.

Q.—What did you think they were supporting it with?

Mr. Lewin:—I object to that.

By Mr. Leahy:

Q.—Did you report it to the Surgeon General?

A.—That they were getting financial support?

Q.—Yes.

A.—I told him the Twentieth Century Foundation was interested in putting us off this project. If I may give you in words what I think as to that, the Twentieth Century Foundation is set up to finance such institutions, so the natural inference was that it was financial. But I did not use the word "financial," because I was not interested in the way the unit was promoted in the H. O. L. C. Where it got its finances was not a thing that was submitted to me at all.

Q. (Reading further)—"Needless to say, Jones and the Surgeon General are dropping it like a hot cake." Did you say anything to the Surgeon General at that time about dropping the matter?

A.—No.

Q.—Was anything said by you at the time with reference to dropping it, in substance, such as General Ireland reported? (Reading): "Needless to say, Jones and the Surgeon General are dropping it like a hot cake."

A.—I more than likely made an observation to the effect that I did not see how this project could succeed, since it was violently opposed by the members of the District Medical Society.

Q.—Had you found that out on March 27, 1937?

A.—I found it out within three or four days after I had first interviewed Mr. Zimmerman.

Q.—The statement is that it was in the early part of the week, and the letter is dated March 27. Do you think within a week you talked with the Surgeon General and told him that the District Medical Society was opposed to it?

A.—Yes; I did that immediately.

Q.—Was there anything at all that you reported to the Surgeon General which approached the thought that "Jones and the Surgeon General were dropping it like a hot cake"?

A.—No.

Q.—Do you know General Ireland pretty well?

A.—He is my most intimate and respected friend.

Q.—Did you know he had written this letter?

A.—No; I did not.

Q.—Did you know he had written any letter to Dr. Cutter?

A.—No; I did not, until I saw it here.

Q.—Did you ever discuss the matter with your trusted friend?

A.—The matter of this letter?

Q.—Yes.

A.—No.

Q.—You never discussed with General Ireland anything at all about your visit to H. O. L. C.?

A.—Oh, yes; many times.

Q.—And you discussed it with him prior to the date of this letter, March 27, did you not?

A.—Yes, sir; I did.

Q.—But these facts, which General Ireland wrote on March 27, 1937, were not statements which came from you at all?

A.—Not as stated; no. I made observations to General Ireland on state medicine, which I can tell you if you care to hear them.

Q.—Did you make the observation that this was an entering wedge to state medicine?

A.—Not in those words; no.

Q.—In substance?

A.—It depends on what you mean by "in substance."

Mr. Lewin:—Why don't you let him state what he said?

Mr. Leahy:—If he doesn't understand that, I am satisfied.

The Witness:—I understand it perfectly, if you will let me answer it the way I stated it.

By Mr. Leahy:

Q.—Did you in substance tell General Ireland as it is stated there?

Mr. Lewin:—I object to that, if your Honor please. Counsel ought to be required to ask the witness what he said.

THE COURT:—He has answered that. Objection sustained.

By Mr. Leahy:

Q.—I will ask you what you did tell General Ireland about state medicine in connection with this project?

A.—I told General Ireland, along with the other members of the medical profession with whom I conferred, voluntarily and by invitation, that I felt the medical profession had a job to do in providing some way to take care of the low-wage group, and that I felt to let it get out of the hands of the medical profession and into the hands of laymen who knew little about the medical side, would finally resolve itself into probably—not entirely, but we would have state medicine or socialized medicine. That was my opinion at the time, and that is the way I expressed it.

Q.—Did you think that a group of laymen organizing a corporation to provide medical care was an entering wedge to state medicine?

A.—Unless it was supported by the medical profession as a whole; yes.

Q.—And unless it was controlled and managed by the medical profession; is that right?

A.—Directly and positively influenced; yes, sir.

Q.—For instance, did you discuss with General Ireland the fact that a group of laymen who would organize such a corporation as that would not be the proper parties to attempt to distribute medical care to the low-income group?

A.—I have no doubt that I did, because I hold that view.

Q.—In other words, your view was that any attempt on the part of laymen to distribute medical care would be what you would call an entering wedge to state medicine?

A.—Yes.

Q.—That is what you felt?

A.—It would incline to it; yes.

Q.—Do you recall what Dr. Christie or Dr. White or Dr. Morgan or Dr. Groover or Dr. Verbrycke felt about the matter at the time, as they expressed themselves to you, Colonel?

A.—Some of them expressed themselves as I have stated in my previous testimony, that they were opposed to it, that they could not be sympathetic toward the project; that any member of the medical profession in the District of Columbia who joined it would be kicked out of the District Medical Society or lose his membership therein, and any member of the medical society of the District of Columbia who consulted with a member of the group would likewise be put out of the District Medical Society.

Q.—Did they give their reasons why they were not in favor of it?

A.—The thing which you have been very much interested in bringing out, and that is their fear of socialization of medicine, state medicine.

Q.—Colonel, may I ask you this, do you think that state medicine is in the public interest?

A.—No; I do not.

RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—Did you think that the plan which you were asked to head as medical director was itself an entering wedge for state medicine?

A.—I think I will have to answer that my own way. You keep talking about my plan when no plan was ever adopted.

Q.—Let me ask you this, if you had been able to secure the support of the District Medical Society so you could have gotten consultants from them and could have gotten members of the District Medical Society to serve under you in the Group on a salary, would you have regarded that as an entering wedge for state medicine?

A.—No, I don't think so. I think it would have been a substitute.

Q.—Would you regard it as unethical?

A.—I don't think so.

Q.—Did you think it was necessary that there should be lay enterprise in the handling of medical care?

A.—Well, from my training I wouldn't want a layman around it.

Q.—Who would you leave to make the collection of dues? Would you leave that to the laymen?

A.—A subordinate, yes, I would leave that to a layman, a subordinate.

Q.—You were willing to take the proposition that was offered you by Zimmerman and Penniman and become the Medical Director of this group if you could have gotten some support from the District Medical Society, instead of opposition. Is that right?

A.—I think if you take all of the actions throughout the whole period of time—you are separating things here. Throughout the whole period of time if the District Medical Society had agreed, I would have taken it, yes.

RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Because, just as you have said, Colonel, the care of the sick should be under the direction and control of the doctors, should it not?

A.—Without any question.

Q.—And there should not be any lay interference coming between the doctor and his patient?

A.—Again without any question.

Q.—And you wouldn't have been connected with a plan which permitted such condition?

A.—No.

Q.—And you wanted the management and control if you were the director in any scheme so that you, as the head of it, would be in full charge of the medical care and control of your patients?

A.—Yes.

FURTHER RE-DIRECT EXAMINATION

By Mr. Lewin:

Q.—Did Zimmerman ever suggest to you that you wouldn't be in full charge if you accepted his offer?

Mr. Leahy:—I object.

Mr. Lewin:—I think I am entitled to this.

Mr. Leahy:—A suggestion by somebody else.

Mr. Lewin:—It is a proposition that was offered.

THE COURT:—The examination takes such a broad field without objection from either side, it makes most any question that might be asked admissible. One thing goes to another until you get to a point where you have broadened the field of examination so that I cannot very well limit it. Answer the question.

The Witness:—You will have to state it.

(The pending question, as above recorded, was read by the reporter.)

By Mr. Leahy:

Q.—You wouldn't have received such a suggestion, would you?

Mr. Lewin:—I object to that.

THE COURT:—Sustained.

FURTHER RE-CROSS EXAMINATION

By Mr. Leahy:

Q.—Well, Colonel, was there any plan ever adopted?

A.—Not in relation to me specifically, no plan was ever adopted.

Q.—Did you ever see the plan which was finally adopted by H. O. L. C.?

A.—No.

By Mr. Lewin:

FURTHER RE-DIRECT EXAMINATION

Q.—Isn't it true that one other plan which you suggested and which you were willing to undertake involved prepayment on the one hand and group practice on the other, under a medical director, the physicians being compensated by salary, with a centrally located clinic with hospitalization given in the private hospitals and with consultants obtained from the District Medical Society or any other private doctors?

A.—That is correct.

TESTIMONY OF GEORGE GORDON PAYNE

DIRECT EXAMINATION

By Mr. Kelleher:

George Gordon Payne, a court reporter, transcribed a hearing of the executive committee of the District of Columbia Medical Society in 1937.

Q.—How many nights did the hearings cover?

A.—There were four sessions.

The witness identified transcripts of sessions of the executive committee of the District of Columbia Medical Society on Dec. 6, Dec. 10, Dec. 16 and Dec. 20, 1937.

TESTIMONY OF THEODORE WIPRUD

FURTHER DIRECT EXAMINATION

Mr. Wiprud identified minutes of the executive committee of the District Medical Society for June 6, 1938. He also identified minutes of the District Medical Society for Feb. 3, March 10 and Oct. 20, 1937, Feb. 23, March 23, April 13 and Oct. 12, 1938. He also identified minutes of the executive committee of March 9, April 25, July 1 and Oct. 24, 1938.

FURTHER CROSS EXAMINATION

By Mr. Leahy:

Mr. Leahy:—May they be subject also to our review and looking of them over this evening?

THE COURT:—What?

Mr. Leahy:—The offer that they be received in evidence, may it be reserved until we look over those this evening?

THE COURT:—Oh, I think so, yes.

TESTIMONY OF BETTY LOGSDON

DIRECT EXAMINATION

Mrs. Betty Logsdon, secretary to Dr. J. Ogle Warfield, took dictation from him concerning or relating to correspondence between him and the various hospitals, and between him and the doctors of the hospital committee of the Medical Society of the District of Columbia. She sent a questionnaire to the Emergency, Homeopathic, Providence, Sibley, Garfield, Georgetown, George Washington, Columbia, Childrens and Casualty hospitals on the instruction of Dr. J. Ogle Warfield. These she identified with the answers. She also identified the report of the Hospital Committee dated Dec. 1, 1937, on the letterhead of Dr. J. Ogle Warfield Jr., also the report of the hospital committee submitted to the executive committee of the Medical Society of the District of Columbia on March 28, 1938, which report bears certain handwritten interlineations.

CROSS EXAMINATION

By Mr. Leahy:

This dealt with identification of documents and signatures thereon.

When the witness failed to identify certain signatures Mr. Leahy said: "Might we reserve the objection until the morning on this, if your Honor please?"

THE COURT:—Yes, we will take this up first thing in the morning.

. . . . . .

(To be continued)

MEDICAL LEGISLATION

HEARINGS ON PROPOSED HABIT FORMING DRUG REGULATIONS

The Federal Food, Drug and Cosmetic Act, as amended, declares in section 502 (d) that a drug shall be considered misbranded if it contains any quantity of the "narcotic or hypnotic substance alpha-eucaine, barbituric acid, beta-eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, heroin, marihuana, morphine, opium, paraldehyde, peyote or sulfonmethane" or any chemical derivative thereof which the Administrator of the Federal Security Agency has found to be and by regulations has designated as habit forming, unless its label bears the name and quantity or proportion of such substance or derivative and in juxtaposition therewith the statement "Warning—May be habit forming." Under the authority thus granted, the Federal Security Administrator has announced[1] proposed regulations designating as habit forming each of the chemical derivatives listed below:

A. Chemical derivatives of barbituric acid—

Barbital	Sandoptal	Sigmodal
Phenobarbital	Alurate	Butisol
Amytal	Pernoston	Rutonal
Neonal	Evipal	Eldoral
Ipral	Nostal	Eunarcon
Ortal	Pentothal	Rectidon
Phanodorn	Seconal	Prominal
Pentobarbital	Proponal	Narconumal
Mebaral	Pentenal	Delvinal
Dial	Cyclopal	

All lithium, sodium, potassium, magnesium, calcium, strontium and ammonium salts of any of the foregoing acids.

B. Chemical derivatives of alpha-eucaine or beta-eucaine—

Any salts of alpha-eucaine or beta-eucaine formed by the combination of any such substance with any acid.

C. Chemical derivatives of bromal—

Bromal hydrate
Brometone
Bromoform

D. Chemical derivatives of cannabis (marihuana)—

Extract of cannabis
Fluidextract of cannabis
Tincture of cannabis

E. Chemical derivatives of carbromal—

Sedormid	Neuronal
Bromural	Acetylcarbromal

F. Chemical derivatives of chloral—

Chloral hydrate	Chloralformamide
Chlorobutanol	Alpha-chloralose
Chloralimide	

G. Chemical derivatives of cocaine—

All salts of cocaine formed by the combination of cocaine with any acid.

H. Chemical derivatives of codeine—

Dicodid
Eucodal
Eucodin

Any salt of dicodid, eucodal or codeine formed by the combination of any such substance with any acid.

I. Chemical derivatives of heroin—

All salts of heroin formed by the combination of heroin with any acid.

J. Chemical derivatives of morphine—

Dilaudid
Paramorphan
Ethylmorphine

Any salt of dilaudid, paramorphan, ethylmorphine or morphine formed by the combination of any such substance with any acid.

1. Federal Register 6: 680 (Jan. 30) 1941.

K. Chemical derivatives of opium—
Extract of opium
Fluidextract of opium
Tincture of opium

L. Chemical derivatives of paraldehyde—
Metaldehyde

M. Chemical derivatives of sulfonmethane—
Sulfonethylmethane
Sulfondiethylmethane

The hearing on these proposed regulations will begin at 11 a. m. on March 3 in rooms A, B and C of the Departmental Auditorium, Constitution Avenue between Twelfth and Fourteenth streets, Washington, D. C. All interested persons are invited by the administrator to attend the hearing and offer evidence relevant and material to the subject matter under consideration.

MEDICAL BILLS IN CONGRESS

Bills Introduced.—S. 860, introduced by Senator Sheppard, Texas, proposes to provide for the common defense in relation to the sale of alcoholic liquors to the members of the land and naval forces of the United States and to provide for the suppression of vice in the vicinity of military camps and naval establishments. S. 869, introduced by Senator McNary, Oregon, provides for the payment of annuities to persons 21 years of age or over who are citizens of and residents within the United States and who have not more than 20/20 of visual acuity in the better eye with maximum correction or whose field of vision is limited to 20 degrees or less from the fixation point in all quadrants, if the annual income of such persons is less than $1,200. S. 907, introduced by Senator Walsh, Massachusetts, provides for the continuation in the service of the Army, Navy, Marine Corps and Coast Guard beyond the term of their enlistment those suffering from disease or injury incident to service and not due to misconduct and in need of medical care or hospitalization. H. R. 143, introduced by Representative Welch, California, extends the benefits of hospitalization and the privileges of the soldiers' homes to certain persons who served in a civilian capacity under the jurisdiction of the Quartermaster General during the War with Spain, the Philippine Insurrection or the China Relief Expedition. H. R. 2488, introduced by Representative Bradley, Michigan, proposes a federal appropriation of $700,000 to construct a veterans' hospital, with a capacity of 150 beds in or near the city of Gladstone, Michigan. H. R. 2504, introduced by Representative Izac, California, proposes to construct a marine hospital in San Diego, Calif. H. R. 2508, introduced by Representative Izac, California, proposes to amend the Social Security Act so as to provide benefits to persons permanently crippled. H. R. 2510, introduced by Representative Izac, California, proposes an appropriation of $1,000,000 to construct a veterans' hospital, with a capacity of at least two hundred beds, in or near the city of San Diego, Calif. H. R. 3154, introduced by Representative Rolph, California, proposes an appropriation of $600,000 to construct a one hundred and thirty-four bed patient capacity addition to the existing veterans' hospital at Fort Miley, San Francisco, for the treatment of general medical and surgical disabilities. S. 818, introduced by Senator Barbour for himself and Senator Smathers, both of New Jersey, proposes to amend the act providing for the promotion of vocational rehabilitation of persons disabled in industry or otherwise by defining the term "vocational rehabilitation" to include medical, surgical, corrective and other services and care furnished for the purpose of rendering a person disabled fit to engage in a remunerative occupation. H. R. 3318, introduced by Representative Healey, Massachusetts, proposes to authorize the Administrator of Veterans' Affairs to furnish domiciliary and hospital care and medical treatment to World War veterans of the United States merchant marine. H. R. 3383, introduced by Representative Kefauver, Tennessee, proposes to reduce the tax on nonbeverage ethyl alcohol used exclusively in the manufacture of medicinal preparations, flavoring extracts, flavors and for other nonbeverage purposes. H. R. 3463, introduced by Representative Voorhis, California, proposes to promote the national health and welfare through appropriation for hospitals and for the prevention, education and control of tuberculosis. To provide adequate hospital facilities, the sum of $25,000,000 would be made available for the fiscal year ending June 30, 1941, the sum of $50,000,000 for the fiscal year ending June 30, 1942 and thereafter $100,000,000 for each of the ten succeeding fiscal years. From these appropriations, loans would be made to states, counties, cities and other political subdivisions for the construction of hospitals and for their maintenance for a period not over four years. In addition, for the fiscal year ending June 30, 1941, an appropriation of $3,000,000 would be authorized, for the fiscal year ending June 30, 1942 an appropriation of $5,000,000, and for each of the ten fiscal years thereafter an appropriation of $10,000,000 a year for grants in aid in the prevention, education and control of tuberculosis. The bill contemplates that free diagnostic and treatment facilities shall be provided by all health departments or clinics receiving funds under the act (1) for the diagnosis and emergency treatment of any patient referred by a private physician either for continued treatment or for consultive or diagnostic advice and opinion and (2) for any patient unable to afford private medical care. The determination of the ability of patients to pay for medical care, the bill proposes, shall be the responsibility of the director of the health department or clinic in conjunction with a committee from the local medical societies. If and when tuberculosis shall cease to be a national health problem, the bill provides that such physical equipment and facilities as the federal government may have acquired by virtue of the operation of the bill shall thereafter be utilized in the control of cancer or other major health hazards. H. R. 3484, introduced by Representative Byron, Maryland, proposes to provide retirement pay and hospital benefits to certain reserve officers, Army of the United States, disabled while on active duty. H. R. 3492, introduced by Representative Kilday, Texas, proposes to impose additional duties on the United States Public Health Service in connection with the investigation, treatment and control of tuberculosis. This bill proposes for the fiscal year ending June 30, 1941 a federal appropriation not to exceed $7,750,000, for the fiscal year ending June 30, 1942, $33,500,000, for the fiscal year ending June 30, 1943, $37,000,000 and for each fiscal year thereafter such sum as may be necessary, subject to the limitation that subsequent to the fiscal year 1946, the appropriations authorized under the act shall not exceed $17,500,000. From this federal money, it is proposed, allotments will be made for the purpose of assisting states, counties, cities, health districts and other political subdivisions to establish, extend and improve measures for the prevention, treatment and control of tuberculosis, including the provision of facilities for sanatorium and other care for persons with tuberculosis and for the purpose of making studies, investigations and demonstrations to develop more effective measures of prevention, treatment and control of tuberculosis. State plans must be submitted for approval to the Surgeon General of the Public Health Service. Furthermore, the bill proposes to establish in the Public Health Service a Division of Tuberculosis Control.

STATE MEDICAL LEGISLATION

Arkansas

Bill Introduced.—H. 381, to amend the medical practice act, proposes to authorize the revocation of the license of a licentiate who has been convicted of any crime involving moral turpitude. The fact that the sentence has been suspended or that the convicted licentiate has been granted probation or any other leniency by the court or that he has not been required to suffer the punishment prescribed in the judgment is not to prevent the board from revoking the license of the convicted licentiate.

California

Bills Introduced.—A. 1683 proposes to grant to a hospital treating a person injured through the fault of another a lien on all claims, rights of action, judgments, settlements or compromises

accruing to the injured person by reason of his injuries. A. 2247, to amend the workmen's compensation act, proposes to permit an injured employee to select a doctor of chiropractic to treat his industrial injuries at the expense of the employer or his insurer. A. 2329 and A. 2509 propose that "Any hospital accepting pay patients who denies to any licensed physician and surgeon desiring to practice in such hospital for the reason that the physician and surgeon denied such opportunity is not a member of any association or society of physicians and surgeons shall be liable in damages in an amount not less than one thousand dollars ($1,000), which may be recovered in an action at law brought for that purpose." A. 2439 proposes to prohibit the operation of a clinic or dispensary without a permit from the department of health. A. 2471 proposes to establish a tax-supported system of compulsory health insurance. S. 980, to amend the law permitting the court in any civil or criminal proceeding to appoint one or more expert witnesses to investigate and testify concerning matters on which the court deems expert evidence advisable, proposes to give this right also to juvenile courts. A. 1854 proposes to permit drugless practitioners to execute the certificate as to freedom from syphilis required of each party to a proposed marriage. A. 2148, to amend those portions of the insurance code authorizing the operation of nonprofit hospital service plans, proposes (1) to permit the formation and operation also of nonprofit medical service plans and (2) to permit hospital service plans to cover also the costs of "x-ray diagnosis and therapy and clinical laboratory procedures." A. 2474 proposes that "Every person engaged in the preparation of food to be served or sold to others, except agricultural employees and domestic employees, shall have obtained within the next preceding three months a certificate that he or she is free from every communicable disease from the state board of public health." A. 2088, to amend the medical practice act, proposes to make the following unprofessional conduct: "All advertising of the medical business in connection with which the holder of any certificate fails to use his name constitutes unprofessional conduct within the meaning of this chapter."

Connecticut

Bills Introduced.—S. 520, H. 1970, S. 1554 and H. 653 propose to authorize the licensing as an industrial attendant of any person who has pursued a course of study in the field of first aid and treatment for traumatic injuries and whose proficiency has been certified to by a duly qualified physician. An industrial attendant is to perform work only under the direction of a licensed physician and is to perform for their employer only such work as is directly connected with the operation of an industrial dispensary or hospital. S. 1070 and H. 2438 purport to be "A bill to prevent any doctor from receiving more than five dollars for making outside calls and more than $1.50 for office calls, so that a poor person can live." S. 518 proposes to require every hospital in any city, town or fire district having a general fire alarm station and an electrically operated fire alarm system to be equipped with a fire alarm box or boxes of the type and character used in such district. S. 823 proposes that "Hospitals or other institutions, receiving state grants, and health institutions supervised by at least five licensed physicians may advise and prescribe for married persons regarding marriage problems and may give them access to medical information and supplies conducive to health, notwithstanding the provisions" of the law prohibiting the use of contraceptive articles. H. 1203, to amend the medical practice act, proposes, in effect, to reestablish a board of examiners for eclectic practitioners. H. 1813 proposes that "Hospitals or other health institutions receiving state grants and other health institutions under the supervision of practicing physicians may disseminate information or prescribe contraceptive devices to meet health problems of married women." S. 529 and H. 1979 propose to establish a system of compulsory health insurance. H. 1204, to amend the medical practice act, proposes (1) to eliminate the requirements that an applicant for a license to practice must be a citizen of the United States or must have declared his intention of becoming such, and (2) to require an applicant to have received a degree of Doctoris Medicinae from some incorporated and reputable medical college.

Delaware

Bills Introduced.—H. 37 and H. 69 propose that the medical council of Delaware consist of a licensed osteopath and the presidents of the two state boards of medical examiners, thus proposing to eliminate from membership on the council the chief justice of the state and substituting in his place an osteopath. H. 37 was stricken from the calendar, February 12.

Georgia

Bill Introduced.—H. 371 proposes that a hospital shall have a lien on all property brought into the hospital by any patient to secure the payment of all sums due for food, lodging, treatment, hospitalization or other accommodation.

Idaho

Bill Passed.—H. 207, to enact a so-called uniform pharmacy act, passed the house, February 19. This bill, if enacted, would prohibit a licensed physician from dispensing or using on patients drugs or medical supplies, such as sutures, compacts, compresses and surgical dressings, unless the physician possesses a special permit from the board of pharmacy.

Maine

Bills Introduced.—S. 344 proposes to enact what appears to be the uniform narcotic drug act. S. 410, to amend the chiropractic practice act, proposes (1) to condition the annual renewal of a license on presentation by the licentiate of satisfactory evidence that in the preceding year he has attended one of two educational programs conducted and supervised by the chiropractic board and (2) to define chiropractic as "the science of locating and correcting interference with nerve transmission and expression, without the use of drugs or major surgery." The present law defines chiropractic as "the science of palpating and adjusting the segments and articulations of the human spinal column by hand only." S. 412 proposes to condition the issue of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate that the party has been given a physical examination, including a standard blood test, not more than thirty days prior to the date on which the license is applied for and that in the physician's opinion the party is not infected with syphilis or, if so infected, is not in a stage of that disease whereby it may become communicable.

Maryland

Bill Introduced.—S. 260 proposes to enact a separate naturopathic practice act and to create a board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy. The bill defines naturopathy to be "a drugless branch of the healing art and embraces the diagnosis and practice of physiological, psychological, physical, mechanical and material methods and agencies of healing." The bill proposes to prohibit naturopathic licentiates from using drugs or surgery.

Michigan

Bills Introduced.—S. 134 proposes to prohibit the retail sale or distribution of oil, tincture, elixir or fluid of valerium, valeric acid or crystals of ammonium valeriate except on the prescription of a licensed physician or surgeon. The bill proposes, however, that no such prescription shall be filled until the person presenting the prescription places an inked impression of his thumb or finger on the prescription and writes in ink his name and address on the prescription. The dispensing druggist must then make a report of the sale, including the name and address of the buyer, to the commissioner of the Michigan state police. H. 119, to amend the law requiring both parties to a proposed marriage to possess a physician's certificate as to freedom from syphilis, gonorrhea or chancroid, proposes to limit the fee of the physician for making the necessary examinations and for executing such certificates to $3. H. 129 proposes to prohibit the retail sale and distribution of venereal prophylactics except by licensed physicians and registered pharmacists. H. 133 proposes to repeal the chiropractic practice act.

Minnesota

Bills Introduced.—H. 564 and S. 639 propose that "Any subordinate lodge of a fraternal organization may out of its funds provide medical services for its members and the families of such members and may make contacts [sic] with duly licensed physicians to perform such medical services."

Missouri

Bills Introduced.—S. 7 proposes to grant to every public hospital or clinic and every privately maintained hospital, clinic or other institution for the care of the sick supported in whole or in part by charity and treating a person injured through the fault of another a lien on all rights of action, claims, judgments, settlements or compromises accruing to the injured person by reason of his injuries. S. 15 proposes to require every person undertaking obstetric and gynecologic care of a pregnant woman to take or cause to be taken a sample of venous blood of such woman not later than twenty days after the first examination and to submit the sample to an approved laboratory for a standard serologic test for syphilis. H. 61 proposes to require every applicant for a license to practice any form of the healing art, as a condition precedent to examination and licensure by his respective professional board, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology to be given by a board of examiners in the basic sciences. Each member of the board must be a professor or an assistant or associate professor on the faculty of the University of Missouri, a state teachers' college of Missouri or a university or college of equal standing, and no member may be actively engaged in the practice of the healing arts. H. 62 proposes to prohibit any person licensed to practice any form of the healing art from using the prefix "Doctor" or "Dr." in connection with his name in any letter, business card, advertisement, prescription blank, sign or public listing or display without affixing thereto suitable words or letters designating the degree held and representing the profession he is authorized to practice. H. 63 proposes to authorize the attorney general or any prosecuting attorney to institute an action to enjoin any person from the unauthorized practice of medicine and surgery. H. 64 proposes to require every person licensed to practice medicine and surgery in the state to register biennially with the state board of health and at that time to pay a registration fee of $1. H. 67, to amend the medical practice act, proposes to require applicants for licenses to practice medicine and surgery, in addition to the qualifications now required by law, to have completed a premedical education consisting of a minimum of sixty semester hours of college work.

Nebraska

Bills Introduced.—Bill 187 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate that the party is free from any venereal, contagious and infectious disease. Bill 236, to amend the basic science act, proposes that the board of examiners in the basic sciences shall consist "of at least one member of the profession of medicine and surgery, one member of the profession of osteopathy and one member of the profession of chiropractic." Bill 252 proposes to authorize the state treasurer to credit 10 per cent of all fees remitted into the state treasury by each of the special boards, divisions, bureaus and commissions, including the state boards of examiners in medicine, osteopathy, chiropractic, dentistry, optometry and pharmacy, to the general fund of the state for the purposes provided by law.

Nevada

Bills Introduced.—S. 15 proposes to make it the duty of the state board of health to formulate a plan for the care and treatment of indigent persons suffering from cancer and to establish and designate standard requirements for the organization, equipment and conduct of cancer units or departments in general hospitals in the state. The board is also to be directed to formulate and put into effect an educational plan for preventing cancer throughout the state and for aiding in the early diagnosis of the disease. The bill also proposes to appropriate $50,000 for the ensuing two years for the purposes stated. A. 62 proposes to enact an entire new medical practice act, which, among other things, will permit the issuance of a limited license to practice physiotherapy to persons not possessing the qualifications required of applicants for licenses to practice medicine and surgery without restriction. A license to practice physiotherapy is not to permit the holder to administer drugs or to diagnose or prescribe medicines or to practice medicine as defined in the bill except to treat diseases under the written prescription of a duly licensed doctor of medicine or osteopathy. The bill defines physiotherapy as the use of "actino therapy, hydrotherapy, machino therapy, thermo therapy excepting those procedures involving general hyperpyrexia, and electro therapy, exclusive of the x-ray, radium, electro coagulation, desiccation, and cauterization or other means involving tissue destruction." The bill also proposes to permit a registered nurse to give anesthetics for any regularly licensed physician under his direction for minor surgery, obstetrics or in any emergency.

New Hampshire

Bill Introduced.—H. 312 proposes that "all persons handling food in any public eating house shall submit to a physical examination at least once in every twelve months."

New Jersey

Bill Introduced.—A. 4 proposes to repeal all laws regulating the practice of the healing art.

New Mexico

Bills Introduced.—H. 83 proposes to enact a separate naturopathic practice act and to create an independent board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy. A license to practice naturopathy, the bill states, is to entitle the holder to diagnose and treat human beings as taught in standard chartered naturopathic colleges, schools or universities. H. 88 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate that the party not more than thirty days prior to the application for the license has been given such an examination, including a standard serologic test, as may be necessary for the discovery of syphilis and that, in the opinion of the physician, the person is either not infected with syphilis or if so infected is not in any stage of that disease which may become communicable to the married partner. H. 123 proposes to require every applicant for a license to practice any form of the healing art, as a condition precedent to examination and licensure by his respective professional board, to pass examinations in anatomy, physiology, chemistry, bacteriology and pathology to be given by a board of examiners in the basic sciences. The board is to consist of five members, none of whom may be actively engaged in the practice of the healing art or any branch thereof.

North Dakota

Bill Introduced.—H. 219 proposes to enact a separate naturopathic practice act and to create a board of examiners to examine and license applicants for licenses to practice naturopathy. The bill defines naturopathy as "the act and science of applied therapy as heretofore or hereafter taught by the recognized schools and colleges of naturopathy, except materia medica and major surgery." The bill provides that naturopathy and natureopathy shall be construed as synonymous terms and that "Sanipractic and Drugless Physicians shall be interpreted as the same as Naturopathy and its practice, and shall hereby be governed and regulated by this act and law." This bill was indefinitely postponed by the House, February 21.

Bills Passed.—The following bills passed the House, February 21: H. 261 proposing so to amend the chiropractic practice act as to condition the annual renewal of a license to practice chiropractic on the presentation by the licentiate of evidence that in the preceding year he has attended a post graduate course in an accredited chiropractic school or college or has attended at least a two day session of the "educational" program as arranged by the North Dakota Chiropractic Association; and H. 301 proposing to require licensed osteopaths to renew their licenses annually and to condition the renewal on the payment of a fee of $3 and presentation of evidence that the licentiate

has attended at least two days of the annual "educational" program and meeting conducted by the North Dakota State Osteopathic Association, or its equivalent, in the preceding year.

Ohio

Bills Introduced.—S. 142 proposes to require every physician who attends any woman pregnant with child for conditions relating to pregnancy during the period of gestation or delivery to take or cause to be taken a sample of her blood at the time of the first examination or within fifteen days thereafter and to submit the sample to an approved laboratory for a standard serologic test for syphilis. S. 260, to amend the medical practice act, proposes that "the practice of spiritual healing as an integral part of the mode or worship of an established religious denomination shall not be regarded as the practice of medicine." Substitute H. 101 proposes a new system for the statewide registration of births, deaths and other vital statistics.

Oregon

Bills Introduced.—H. 361 proposes that "Whenever any person engaged in the practice of a profession licensed by the state of Oregon shall permit the name of a person who has been dead for more than one year to remain upon the doors or windows or any other conspicuous place upon the premises from which he is conducting such professional practice or shall permit the name of a person who has been dead for more than one year to appear upon any letterhead or other printed matter the circulation of which is under such practitioner's control and to appear thereon in connection with his own name shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than one thousand dollars ($1,000)." H. 382, to amend those provisions of the workmen's compensation act authorizing an employer to contract with a third person for the rendering of necessary medical and hospital care to employees, proposes that every such contract shall provide (*a*) that the contractor shall furnish all medicines and medical supplies prescribed by the attending physician, (*b*) a reasonable choice of physicians and/or specialists in the major branches of the medical profession and (*c*) hospitalization, when required, to be furnished in hospitals accredited by the American Medical Association. S. 248 proposes apparently that no person engaged in the practice of any healing art shall be denied the privilege of attending any inmate in a county hospital.

Pennsylvania

Bill Introduced.—S. 140 proposes a procedure to reimburse hospitals treating indigent persons injured in motor vehicle accidents.

South Dakota

Bill Introduced.—H. 205, to amend the medical practice act, proposes apparently to eliminate the requirement in the present law that an applicant for a license to practice medicine must have served an internship in an approved hospital.

Texas

Bills Introduced.—H. 79 proposes to condition the issue of a license to marry on the presentation by each party to the proposed marriage of the certificate of a physician that within fifteen days of the date of application for a license he has thoroughly examined the party and caused to be made standard serologic tests and such other laboratory procedures as are essential to the determination of freedom from syphilis and all other venereal diseases and that the results of such examinations, tests and history indicate that the party is free from any transmissible condition of syphilis. H. 189 proposes to enact a separate chiropractic practice act and to create an independent board of chiropractic examiners to examine and license applicants for licenses to practice chiropractic. The license to practice chiropractic proposed in the bill is not to authorize a holder to prescribe medicine or perform surgery, but chiropractors are to be permitted to render first aid, sign health cards and death certificates, and enter hospitals within the state for the purpose of adjusting their patients or inmates thereof. H. 324 proposes to enact a separate naturopathic practice act and to create an independent naturopathic examining board. The bill proposes to define naturopathy as the "Diagnosis and practice of physiological, mechanical, and material science of healing as follows: The physiological and mechanical sciences such as the mechanotherapy, articular manipulation, corrective and orthopedic gymnastics, neurotherapy, Psychotherapy, Hydrotherapy, and mineral baths, electrotherapy, thermotherapy, phototherapy, chromotherapy, vibrotherapy, thalmotherapy, and dietetics, which shall include the use of foods of such biochemical tissue building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, seeds, barks, herbs, roots and vegetables uncompounded and used in their natural state."

Utah

Bill Introduced.—H. 130, to amend the medical practice act, proposes apparently to permit licensed naturopaths to practice "in accordance with the tenets of the professional schools of naturopathy recognized by the department of registration." This bill was reported favorably to the House, February 19.

Washington

Bills Introduced.—S. 91 proposes to make the facilities of the McKay memorial research hospital available for general hospital care and treatment of persons entitled to such service at public expense. S. 93 and H. 343 propose to create within the Department of Social Security a subdivision to be known as a division for physically handicapped to provide (1) such medical and surgical care as will tend to alleviate or remove causes of disability, (2) for vocational adjustment and training and (3) more adequate maintenance than is now available for physically disabled persons who are in need. S. 191 proposes to create in the Department of Labor and Industry the office of chief medical adviser and a board to be known as the State Medical Advisory Board. The board is to meet with the chief medical adviser and the director of labor and industries to discuss and advise on all problems dealing with the diagnosis, care, treatment and operative technic of victims of industrial accidents and occupational disease and as to the reasonableness of charges to be made by a physician, surgeon, hospital, druggist or any other person rendering service or furnishing medicine or drugs to an injured workman. The director of labor and industries with the aid of the chief medical adviser and the counsel and advice of the state medical advisory board is to adopt a fee bill of the maximum charges which may be made by any physician or other person rendering services or medicines because of a disability suffered while engaged in extrahazardous work. Any fee or charge in excess of the maximum contained in the fee bill referred to is to be invalid as to the excess. H. 175 proposes to authorize the establishment of public hospital districts except in class A and first class counties. The public hospital districts, when established, are to own and operate hospitals and supply hospital services to the residents of the territory within the jurisdiction of the district. H. 202 proposes that no corporation or other organization or any individual or any governmental subdivision shall require that any individual, as a condition precedent to obtaining or retaining employment, shall be compelled to receive or be given vaccine, serum shots, toxins, antitoxins or serologic by-products "nor adopt rules or regulations requiring such compulsory methods." H. 370, to supplement the medical practice act, proposes to require every licensed physician to renew his license with the Director of Licenses on or before July 1 of each year, and to pay at that time a fee of $5. H. 371 proposes to enact a separate drugless therapeutics practice act and to require the director of licenses to appoint an examining committee of three practitioners of drugless therapeutics to examine applicants for licenses to practice drugless therapeutics. The bill proposes to define drugless therapeutics as "the practice of the psychological, mechanical, and material sciences of healing, for the relief of any wound, fracture, bodily injury or disease, either mental or physical, as follows: The psychological sciences, such as psychotherapy and suggestive therapy; the mechanical sciences, such as mechanotherapy, physiotherapy, electrotherapy, thermotherapy, phototherapy, chromotherapy, vibrotherapy, concussion and pneumatotherapy; and the material sciences, such as dietetics and food sciences, and external applications; but shall not mean the administering, prescribing or using of drugs or medicines, either internally or externally." S. J. Res. 10

proposes to submit to the electors a proposal so to amend the constitution of the state as to authorize the legislature to establish a state owned and operated lottery, the proceeds from which shall be confined to old age assistance, public assistance and publicly owned hospitals. S. 246 proposes to authorize every board of directors of school districts of cities of the first class to arrange at school expense for the medical examination of students whose parents or guardians are unable to pay for the same. H. 360 proposes to repeal the law authorizing the compulsory sterilization of certain socially inadequate inmates of state institutions. H. 310 proposes to enact what it designates as the uniform pharmacy act. The bill does not expressly exempt physicians from its provisions and is framed in such broad language as to raise a doubt as to the right of a licensed physician who has not obtained an additional license from the board of pharmacy to dispense or use on a patient drugs and such medical supplies as absorbent cotton, bandages, gauze, sutures, compacts, compresses and surgical dressings.

West Virginia

Bill Introduced.—H. 246 proposes to prohibit the operation of a hospital unless licensed by the state committee on hospitals, which the bill proposes to create as a division of the state department of health.

Wisconsin

Bills Introduced.—S. 160 proposes that in prosecutions involving the issue of the operation of a motor vehicle while under the influence of intoxicating liquors the court may admit evidence of the amount of alcohol in the defendant's blood at the time alleged as shown by a chemical analysis of his breath, urine or other bodily substance. A. 245 proposes to authorize the organization and operation of cooperative associations to provide medical or hospital care for their members. The bill also proposes that no hospital supported in whole or in part by public funds or which is wholly or partially tax exempt shall deny to any physician the facilities of the hospital nor discriminate against him in their use because the physician is affiliated with a cooperative association which undertakes to furnish medical and hospital service to its members. The bill also proposes that no physician being otherwise eligible for membership shall be excluded from membership in the state medical society or any county medical society because of his affiliation with such a cooperative association.

Wyoming

Bill Passed.—S. 78 passed the senate, February 11, proposing that, whenever in any civil or criminal proceeding issues arise on which the court deems expert evidence desirable, the court, on its own motion, or on the request of either party, may appoint one or more experts, not exceeding three on each issue, to testify at the trial.

Bills Introduced.—S. 94, to amend the medical practice act, proposes to add the following as an additional ground for the revocation of a license to practice medicine: "failure, neglect or refusal [of the licentiate] to take a post graduate course of study in medical subjects in a qualified medical school for a period of not less than six weeks in every five years." S. 89 proposes a new act relating to the registration, compilation, preservation data pertaining to births, deaths, stillbirths, adoptions, legitimations and marital status.

OFFICIAL NOTES

RADIO BROADCASTS

"Doctors at Work" is the title of the sixth annual series of dramatized radio programs being presented by the American Medical Association and the National Broadcasting Company.

The series opened Wednesday, Nov. 13, 1940 and will run for thirty consecutive weeks, closing with a broadcast from the annual session at Cleveland on June 4. The program is scheduled for 10:30 p. m. eastern standard time (9:30 central, 8:30 mountain, 7:30 Pacific time) over the Blue network, other N. B. C. stations and Canadian stations.

The programs are broadcast on what is known in radio as a sustaining basis; that is, the time is furnished gratis by the radio network and local stations, and no revenue is derived from the programs. Therefore, local stations may or may not take the programs at their discretion, except those stations which are owned and operated by the National Broadcasting Company.

Some radio stations may be unable to broadcast the program at the regular scheduled time and may transcribe and broadcast it at another hour or even on another day. It is advisable therefore to verify the time by reference to local newspapers or by telephoning the local Blue network stations.

The programs will dramatize what modern medicine offers the individual in the way of opportunities for better health and the more successful treatment of disease. Incidental to this main theme the programs will explain the characteristics of the different fields of modern medicine and its specialties.

Descriptive posters for local distribution may be had gratis from the Bureau of Health Education, American Medical Association, 535 North Dearborn Street, Chicago. Program titles will be announced weekly in THE JOURNAL and monthly in *Hygeia*, the Health Magazine.

Tickets are available for each broadcast. Address the Bureau of Health Education, American Medical Association, 535 North Dearborn Street, Chicago. Tickets are free, but a stamped self-addressed envelop should accompany requests.

The next three programs to be broadcast, together with their dates and titles, are as follows:

March 5. Fit to Fight.
March 12. Brain Surgeon.
March 19. First Line of Defense.

ADDRESSES BY OFFICIAL STAFF

DR. PAUL C. BARTON:

March 10—Y. M. C. A. Forum, Chicago.
March 19—Woman's Auxiliary to the Jackson Park Branch of the Chicago Medical Society.
March 26—Avondale Methodist Church, Chicago..

DR. W. W. BAUER:

Feb. 28-March 1—National Conference for Cooperation in School Health Education, New York.
March 3—Chicago Medical Society Woman's Auxiliary, North Shore Branch, Chicago.
March 14—Bowen High School, Chicago.

DR. MORRIS FISHBEIN:

March 16—Jewish Community Center, Atlantic City, N. J.
March 17—Executive Club, Asheville, N. C.

DR. FRANK H. LAHEY:

March 10—Southeastern Surgical Congress, Richmond, Va.
March 12—New York Surgical Society, New York.
March 13—American Institute of Electrical Engineers, Steinmetz Lecture, Schenectady, N. Y.
March 19—Bronx County Medical Society, New York.
March 24—New Jersey State Medical Society, Newark.

DR. CARL M. PETERSON:

March 3—Industrial Hygiene Course for Nurses, Marquette University, Milwaukee.

DR. PAUL A. TESCHNER:

March 6—Ladies Aid of Community Church, Gurnee, Ill.
March 14—Chicago West Town Auxiliary to the Railway Mail Association Woman's Club, Maywood, Ill.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Dr. Wilbur to Retire as President of Stanford.—Dr. Ray Lyman Wilbur observed his twenty-fifth anniversary as president of Stanford University January 19. An editorial tribute in the San Francisco *Call-Bulletin*, January 24, also announced Dr. Wilbur's retirement at the close of the present year. Dr. Wilbur was born in Boonesboro, Iowa, April 13, 1875 and graduated at Cooper Medical College, San Francisco, in 1899. His association with Stanford began in 1896 when he was instructor in physiology; subsequently he was lecturer and demonstrator in physiology at Cooper, 1899-1900, and at Stanford, assistant professor of physiology, 1900-1903, professor of medicine, 1909-1916, and dean of the medical school, 1911-1916. He became president of the university in 1916. From 1929 to 1933, on leave of absence from the university, he served as Secretary of the Interior in President Hoover's cabinet. Among other positions Dr. Wilbur served as chairman of the Federal Oil Conservation Board, 1929-1933; chairman of the Committee on the Cost of Medical Care, 1927-1935; president of Better Homes in America, 1929-1935; chairman of the White House Conference on Child Health and Protection, 1929-1931; chairman of the National Advisory Committee on Illiteracy, 1930-1931. Dr. Wilbur has been a trustee of the Rockefeller Foundation since 1923 and of the General Education Board since 1930. He was President of the American Medical Association, 1923-1924, and a member of its Council on Medical Education and Hospitals, 1920-1923, and since 1925; he has been chairman of the Council since 1929. He has also been president of the Association of American Medical Colleges and of the California Academy of Medicine. He has been president of the California Physicians Service since 1939 and of the American Social Hygiene Association since 1926.

DISTRICT OF COLUMBIA

Two Cases of Typhus Fever.—Two cases of typhus fever have been reported in a man and woman working in the same eating establishment in Washington, according to the Washington *Star*, February 11. The District health department has started a program to prevent the spread of the disease.

Personal. — Dr. Custis Lee Hall, Washington, recently received a silver tray and candelabra from the Kiwanis Club in recognition of his sixteen years' service in treating crippled children in the Kiwanis Clinic. Dr. Hall has retired from active practice in the clinic but will continue in an advisory capacity, it is reported.

Society News.—The Medical Society of Virginia, Maryland and the District of Columbia devoted a recent meeting to two symposiums. The speakers in a symposium on the modern concept of pneumonia were Drs. Theodore J. Abernethy, Oscar B. Hunter, Claude Moore and James A. Gannon, Washington. A symposium on the diagnosis and treatment of acute osteomyelitis was presented by Drs. Custis Lee Hall, Guy W. Leadbetter, Washington, and Martin B. Hiden, Leesburg, Va. Mr. Constantine Brown, foreign news editor of the Washington *Evening Star*, was guest speaker at a luncheon.

FLORIDA

New President of State Board.—Dr. Shaler A. Richardson, Jacksonville, has been elected president of the state board of health, succeeding the late Dr. Nicholas A. Baltzell, Marianna. The vacancy on the board created by Dr. Baltzell's death has been filled by Dr. Herbert L. Bryans, Pensacola.

Officers of Health Association.—Dr. Leander J. Graves, Tallahassee, director of the Leon County health unit, was chosen president of the Florida Public Health Association at its meeting in December, succeeding Dr. Albert B. McCreary, Jacksonville (now deceased). Miss Mary Matthews, West Palm Beach, is vice president, and Dr. Edward M. L'Engle, Jacksonville, is the secretary-treasurer. Orlando was designated as the place for the 1941 annual session.

Physical Examinations for Servants. — An ordinance requiring physical examinations and health cards for domestics in Coral Gables became effective on February 1. Newspapers reported that at a recent meeting the city commission decided to include domestics in the ordinance which provides for the health cards for food handlers in public places. The card will have an identification from the police department on one side and a certificate of good health on the other. In the future only domestics with both identifications will be permitted to work in Coral Gables. The city health department will conduct the examinations, which will include a blood test. A fee of 50 cents will be charged for the examinations, which are to be held every six months.

ILLINOIS

Dr. Orr to Speak in Springfield.—Dr. Hiram Winnett Orr, Lincoln, Neb., will deliver the ninth annual lecture of the Springfield Medical Club at the Leland Hotel, Springfield, March 20. His subject will be "New Methods in the Management of Compound Fractures."

New Laboratory Building. — New accommodations have been provided for Flint, Eaton & Company, manufacturers of pharmaceutic preparations, Decatur. One half of the three story building is new construction; the other half has been remodeled. The building houses the control laboratories, library, research and manufacturing departments. An "open house" was held recently to celebrate the completion of the new structure.

Chicago

Personal. — Dr. James B. Herrick has been reappointed chairman of the medical advisory committee of Sunset Camp, a convalescent colony sponsored by the Chicago Heart Association for children afflicted with diseases of the heart. Sunset Camp is situated near Bartlett in the Fox River valley. It is free to children whose parents cannot afford to pay for their treatment.

Memorial Plaque to Dr. Hruby. — A bronze memorial plaque was recently unveiled in the Chicago Municipal Sanitarium and dedicated to Dr. Allan J. Hruby. Dr. Hruby served as dispensary physician to the sanitarium 1917-1918; superintendent, 1918-1923, and secretary and member of the board of directors from 1931 until his death on Nov. 18, 1939. Dr. Hruby's son, Allan Jr., and daughter, Jean, removed the covering from the tablet.

Society News.—The department of otolaryngology of Rush Medical College presented the program before the Chicago Laryngological and Otological Society, January 6. Among others, Drs. Gordon H. Scott and Linden J. Wallner spoke on "Chondroma of the Septum" and "Orbital Cellulitis" respectively.——The Chicago Council of Medical Women was addressed, January 8, by Dr. Beulah Cushman on "Vascular Changes in the Eye"; Marion Hood, Ph.D., "Parasitic Infestations: Slides and Actual Specimen," and Dr. Gertrude M. Engbring, "Medical Work of Hildegard of the Rhine."——Papers were presented before the Chicago Roentgen Society, January 9, by Drs. Byrl R. Kirklin and Harry M. Weber, Rochester, Minn., on "Roentgenologic Aspects of Small Bowel Lesions" and Albert M. Snell, Rochester, "Clinical Phases of Small Bowel Lesions."——At a meeting of the Chicago Pathological Society January 13 the speakers included Drs. Arthur Earl Walker on "Astrocytosis Arachnoideae Cerebelli, a Rare Manifestation of von Recklinghausen's Neurofibromatosis," and Hans P. Popper, "Lipoid Nephrosis and Fat Deposition in the Kidney."——Dr. Ludvig Hektoen was chosen honorary chairman of the board of governors of the Institute of Medicine of Chicago at its recent annual meeting. Dr. Hektoen, who has been chairman of the board, was succeeded by Dr. William F. Petersen. Other officers are Drs. Edwin W. Ryerson, vice chairman of the board; Rollin T. Woodyatt, president of the institute; George H. Coleman, secretary, and Grant H. Laing, treasurer.

INDIANA

Personal.—Dr. Theodore S. Schuldt, Pierceton, has been named health officer of Kosciusko County, filling the unexpired term of Dr. Max D. Garber, Warsaw, who resigned to do research work at Johns Hopkins Hospital, Baltimore, it is reported.

Postgraduate Courses. — An announcement has been received concerning postgraduate courses to be held at Indiana University School of Medicine, Indianapolis, this year. They are: General practitioners, April 28-May 2; pediatrics, March 5, 12, 19 and 26; cardiology, June 23-27; obstetrics, April 14-26 and July 7-19; otolaryngology, April 13-26.

Society News. — The Indianapolis Medical Society was addressed, February 25, by Drs. Reuben A. Solomon on "Spontaneous Pneumothorax"; Lyman T. Meiks, "Lipoid Pneu-

monia," and Ralph U. Leser, "Pulmonary Emphysema."—— Max D. Steer, Ph.D., assistant professor of speech at Purdue University, Lafayette, discussed "Clinical Aspects of Stuttering" before the Tippecanoe County Medical Society in Lafayette, January 14.—— The Northeastern Indiana Academy of Medicine was addressed in Kendallville, January 30, by Dr. Clyde G. Culbertson, Indianapolis, on "The Laboratory in General Practice."

KANSAS

Society News.—The Wyandotte County Medical Society was addressed, February 18, by Drs. Maurice V. Laing, Kansas City, on "Carcinoma of the Breast" and John A. Billingsley, Kansas City, "Value of Fundus Examination with Fundus Pictures." The society was addressed February 4 by Drs. Clay E. Coburn, Kansas City, on "The Work of the Local Draft Examination Boards," and Forrest L. Loveland, Topeka, "Medicine's Part in the National Defense Program."

Spring Clinical Assembly.—The Sedgwick County Medical Society will conduct its fourth spring clinical assembly at the Allis Hotel, Wichita, March 18. Dr. George T. Pack, assistant clinical professor of surgery, Cornell University Medical College, New York, will be the guest speaker. His subjects will be "Cancer of the Breast" and "Cancer of the Stomach." Wichita physicians on the program include:

Dr. Joseph V. Van Cleve, Lymphopathia Venereum (Lymphogranuloma Inguinale).
Dr. Christian A. Hellwig, Pathology of the Thymus Gland.
Dr. Anthony F. Rossitto, X-Ray Therapy in Endocrine Disturbances.
Dr. Claude C. Tucker, Pruritus Ani—Medical and Surgical Treatment.
Dr. Millard W. Hall, Hysterectomy—Clamp Method.
Dr. Vern L. Pauley, Anomalous Vessels.
Dr. George F. Corrigan, Pathological Physiology of the Liver.

Dr. Logan Clendening, Kansas City, Mo., has been selected as the speaker at the banquet.

LOUISIANA

Annual New Orleans Graduate Assembly.—The fifth annual meeting of the New Orleans Graduate Medical Assembly will be held at the Roosevelt Hotel March 3-6. Clinics will be conducted at the various hospitals March 7. The speakers will be:

Dr. Maurice C. Pincoffs, Baltimore, Pancreatitis.
Dr. Charles F. McKhann, Ann Arbor, Mich., Progress in the Control of Respiratory Disease.
Dr. Paul A. O'Leary, Rochester, Minn., The Eczemas.
Dr. Paul D. White, Boston, The Range of the Normal Heart.
Dr. Leo G. Rigler, Minneapolis, Benign and Malignant Tumors of the Stomach.
Dr. Lawrence W. Smith, Philadelphia, Reduced Temperature ("Refrigeration") as an Adjunct to the Treatment of Malignant Disease.
Dr. Ernest E. Irons, Chicago, Aspiration Pneumonia.
Dr. Eugene L. Bishop, Chattanooga, Tenn., Coordination of Malaria Studies and Control of Impounded Waters.
Dr. Arthur H. Ruggles, Providence, R. I., Observations on Shock Therapy in Psychosis.
Dr. Paul C. Colonna, Oklahoma City, Okla., Treatment of Compound Fractures.
Dr. Owen H. Wangensteen, Minneapolis, Studies in the Etiology of Acute Appendicitis.
Dr. George E. Binkley, New York, Treatment of Rectal Cancer.
Dr. George F. Cahill, New York, Present Urologic Conception of Nonspecific Urinary Infections.
Dr. William Wallace Morrison, New York, Modern Otolaryngology for the General Practitioner.
Dr. Richard W. TeLinde, Baltimore, Organic Aspects of Uterine Bleeding.
Dr. Cecil S. O'Brien, Iowa City, Loss of Vision in Elderly People.
Dr. Louis E. Phaneuf, Boston, The Value of Conservative Obstetrics.
Dr. Frederick A. Coller, Ann Arbor, Postoperative Complications.

A joint meeting with the Orleans Parish Medical Society will be held Thursday evening with Dr. Wangensteen discussing "The Management of Acute Intestinal Obstruction" and Dr. Phaneuf, "Complete Tears of the Perineum."

MASSACHUSETTS

Society News.—Florien Heiser, Ph.D., Storrs, Conn., addressed the Massachusetts Psychiatric Society at its recent annual meeting on "The Social Etiology of Mental Disorder." Officers were elected as follows: Drs. Harlan L. Paine, North Grafton, president; William Franklin Wood, Belmont, vice president, and David Rothschild, Foxboro, secretary and treasurer.——The Worcester District Medical Society devoted its meeting in Worcester January 8 to a symposium on the surgical problem in biliary lithiasis; the speakers were Drs. John F. Kenney, Meyer Saklad, Frederic V. Hussey, Emanuel W. Benjamin and Eliot A. Shaw, all members of the staff of Memorial Hospital, Pawtucket, R. I.——Dr. Hallowell Davis, Boston, discussed "Clinical Significance of the Electroencephalogram" before the New England Society of Physical Medicine, January 22.

Public Medical Lectures.—The Harvard Medical School, Boston, opened a course of free public lectures on medical subjects, January 5, with Dr. William B. Breed discussing "The Common Cold and How to Treat It." Other lectures in the series are:

Dr. Joseph C. Aub, Hormones and Children, January 12.
Dr. Henry C. Marble, How Accidents Happen, January 19.
Dr. Alan R. Moritz, Medical Aids to Justice, January 26.
Dr. Oliver Cope, Modern Advances in Surgery, February 2.
Dr. Frederick F. Russell, Medical Problems Presented by Selective Service, February 9.
Dr. Maurice B. Strauss, Use and Abuse of Vitamins, February 16.
David B. Dill, Ph.D., Fatigue and Health, February 23.
Dr. Carl W. Walter, Transfusion of Blood and Blood Banks, March 2.
Dr. Reginald Fitz, The Pathway of Medical Discovery, March 9.

MICHIGAN

Personal.—Dr. James H. Kelsey, Cassopolis, has been appointed a member of the state board of medical examiners.——Dr. Fred M. Meader, director of medical service and deputy commissioner, Detroit Department of Health, retired on January 28; he has been with the department since 1920, newspapers reported, and is retiring on account of age.

Society News.—Dr. Hobart A. Reimann, Philadelphia, discussed "Treatment of Pneumonia" before the Calhoun County Medical Society in Battle Creek, February 4.——A symposium on pneumonia was presented before the Wayne County Medical Society, Detroit, January 20, by Drs. Alpheus F. Jennings, Emil M. Shebesta, Arthur W. Frisch and Alvin E. Price.

New State Bureau of Tuberculosis.—A bureau of tuberculosis has been created in the state department of health to provide a more intensive tuberculosis program. Dr. George A. Sherman, Pontiac, medical director and superintendent of the Oakland County Tuberculosis Sanatorium and president of the Michigan Tuberculosis Association, has been appointed director of the new unit. Heretofore tuberculosis work has been one of the several activities of the bureau of epidemiology.

Rural Community Builds Its Hospital.—The Addison Community Hospital, built largely by volunteer labor and at a cost of $15,000, was dedicated in Addison recently as a monument to Dr. Bowers H. Growt. Residents of the rural community helped swell the building fund for this project, started by Dr. Growt, by staging benefit shows, dances, church suppers and rummage sales. Those who could not give money contributed their time and labor. The township boards of four adjacent townships voted an appropriation to help meet the expense. Dr. Growt graduated at the University of Maryland School of Medicine, Baltimore, in 1916.

MISSOURI

Dr. Doisy Awarded Gibbs Medal.—Edward A. Doisy, Ph.D., professor of biochemistry, St. Louis University School of Medicine, St. Louis, has been awarded the Willard Gibbs Medal for 1941. The medal is awarded annually by the Chicago section of the American Chemical Society. Dr. Doisy has been active in the study of vitamin K. He received his Ph.D. degree from Harvard University in 1920. He has served at Harvard Medical School as assistant in biochemistry, 1915-1917, and at Washington University School of Medicine, St. Louis, as instructor, associate and associate professor of biochemistry, 1919-1923, joining St. Louis University School of Medicine in 1923. He was honored with the gold medal of the St. Louis Medical Society in 1935; Philip A. Conné Medal, Chemists Club of New York, 1935, and the St. Louis Award in 1939. He was a member of the League of Nations Committee on Standardization of Sex Hormones in 1932 and 1935. He is a member of many scientific societies and has written numerous articles.

NEW JERSEY

Program on Hypertension.—Dr. Soma Weiss, Boston, addressed the Bergen County Medical Society in Hackensack, January 14, on hypertension. The address was followed by a panel discussion presented by Drs. Benjamin I. Ashe, Arthur C. DeGraff, Asa L. Lincoln, Paul Reznikoff and Irving S. Wright, all of New York.

"Town Hall" Meeting.—The Academy of Medicine of Northern New Jersey and the Medical Society of New Jersey are sponsoring a "Town Hall" meeting, March 24, at the Mosque Theater, Newark. Dr. Frank H. Lahey, Boston, President-Elect of the American Medical Association, will speak on "The Health of the Nation."

Medal Awarded to Dr. Stanley.—Wendell M. Stanley, Ph.D., of the Rockefeller Institute for Medical Research, Princeton, received the gold medal of the American Institute of the City of New York at a dinner in New York, February 6. The award was given to Dr. Stanley in recognition of his work in "crystallizing the virus of tobacco mosaic, a feat which has opened up new fields of research, given birth to new ideas about the nature of important disease-producing agents and enlarged the human understanding of life." Dr. Stanley made an address at the dinner on his virus research.

NEW YORK

Personal.—A testimonial dinner was given to Dr. Henry T. Kelly, White Plains, January 11, in celebration of his completion of forty years of practice in White Plains. Dr. Malcolm Goodridge, president of the New York Academy of Medicine, gave an address. Dr. Kelly is chief of staff of the White Plains Hospital and is a former president of the Medical Society of the County of Westchester. The hospital staff and board of governors gave him a silver plate.

Public Lectures in Buffalo.—A series of lectures for the public was presented during January and February at the University of Buffalo School of Medicine, Buffalo, by members of the faculty. The speakers were:

Dr. Earl D. Osborne, Carcinoma in Women—Can Women Prolong Their Lives? January 12.
Dr. James E. King, What You Should Know About Syphilis, January 23.
Dr. Herbert A. Smith, Appendicitis—How to Suspect It and What to Do About It, February 9.
Dr. David K. Miller, Your Food and Your Health, February 23.

The lectures were arranged under the auspices of a new department of postgraduate and continuation teaching, of which Dr. Abraham H. Aaron is the director.

State to Distribute Sulfapyridine.—The New York State Department of Health began the distribution of sulfapyridine for the use of registered doctors of medicine and hospitals in the treatment of pneumococcic infections of patients for whom the purchase of the drug would prove a hardship, according to *Health News*. The drug will be distributed through certain of the regular laboratory supply stations. Certification of relief status or medical indigence will not be required, but physicians were requested to limit their requests in order to conserve the supply. The department has asked physicians to send to the proper health officers records of cases in which sulfapyridine is used.

New York City

Appointments at New York University.—The council of New York University has announced the following appointments to the college of medicine:

Dr. Clair E. Folsome, assistant professor of obstetrics and gynecology.
Drs. Willis S. Knighton, Samuel P. Oast and Brittain F. Payne, assistant clinical professors of ophthalmology.
Dr. Francis A. Echlin, assistant clinical professor of neurosurgery.
Dr. Harold B. Keyes, assistant clinical professor of surgery.

The Wyckoff Lectures.—The fourth series of the John Wyckoff Lectures, sponsored by the Phi Delta Epsilon fraternity, at New York University College of Medicine in memory of the late Dean Wyckoff, was delivered by Dr. John R. Paul, professor of preventive medicine at Yale University School of Medicine, New Haven, February 4-5. The subject of Dr. Paul's lectures was "The Clinical Epidemiology of Poliomyelitis."

Conference on Tuberculosis.—The thirty-ninth annual meeting and conference on tuberculosis of the New York Tuberculosis and Health Association, meeting jointly with the Tuberculosis Sanatorium Conference of Metropolitan New York, will be held March 4 at the Hotel Pennsylvania. At a luncheon meeting Dr. Wilson G. Smillie, professor of public health and preventive medicine, Cornell University Medical College, will speak on "The Ebb and Flow of Public Health," and Hon. Arthur J. Altmeyer, chairman of the Social Security Board, Washington, D. C., on "Social Security and National Security." There will be papers on a program of vocational activity for the sanatorium, staff education of public health nurses in tuberculosis work and tuberculosis among draftees.

Hospital News.—The department of urology, the James Buchanan Brady Foundation, of the New York Hospital marked the twentieth anniversary of its founding with a special program January 15. There was a clinical program in the surgical amphitheater in the afternoon and in the evening the following program was presented at the New York Academy of Medicine: Drs. Roy B. Henline on "Adequate Treatment of Prostatic Disease, with Special Reference to Pathology"; Thomas J. Kirwin, "Management of Carcinoma of the Renal Pelvis"; Oswald S. Lowsley, "The Role of the Brady Foundation in Urology at the New York Hospital," and Colin L. Begg, "Reminiscences in Urology in New York City." Dr. Begg died a few hours after this address, newspapers reported.——Dr. Isidore Snapper, professor of medicine, Peiping Union Medical College, Peiping, China, gave a lecture at Mount Sinai Hospital, January 13, on "Chinese Lessons to Western Medicine."

OHIO

State Pathologists Meet.—The Ohio Society of Pathologists held its midwinter meeting at the Institute of Pathology, Western Reserve University, Cleveland, January 18, with the following speakers: Drs. Howard T. Karsner on "Paget's Disease of the Nipple"; Francis Bayless, "Juxtaglomerular Apparatus," and Harry Goldblatt, "Experimental Observations of Hypertension Associated with Unilateral Renal Disease."

Personal.—Dr. David Rolland Williams, Girard, was the guest of honor at the annual banquet of the Mahoning County Medical Society, Youngstown, January 21, marking his completion of fifty years of medical practice. Dr. Williams at one time practiced in Youngstown and is a nonresident member of the society. The Trumbull County Medical Society also gave a dinner in honor of Dr. Williams in December in Warren. Girard is in Trumbull County.—— Dr. Harry Bookwalter, Columbiana, was recently honored by the Kiwanis Club of Columbiana and other friends at a dinner celebrating his completion of forty years in the practice of medicine.——Dr. Alfred E. Ewing, McDonald, recently retired after thirty-seven years of service with the U. S. Steel Corporation, twenty-four years at the McDonald mills. Officials and employees of the mills gave a banquet in his honor and presented him with a watch.——Dr. and Mrs. Franklin E. Michener, Tiffin, celebrated their golden wedding anniversary on January 5 with a reception at their home.

OREGON

Lectures by Dr. Wangensteen.—Three lectures were given by Dr. Owen H. Wangensteen, Minneapolis, at the University of Oregon Medical School, Portland, February 13-15, under the auspices of the Portland Academy of Medicine. His subjects were "Studies in the Etiology of Appendicitis," "Practical Aspects of the Therapeutic Problem in Bowel Obstruction" and "The Ulcer Problem Viewed from the Standpoint of Etiology and Therapy."

PENNSYLVANIA

New Commission on Nutrition.—The board of trustees of the Medical Society of the State of Pennsylvania, at a meeting in December, established a commission on nutrition and deficiency diseases in accordance with a recommendation adopted by the house of delegates. Dr. Herbert T. Kelly, Philadelphia, has been appointed chairman of the commission, which proposes to disseminate the newer knowledge of nutrition and to study the causes, prevention, early recognition and medical management of nutritional deficiency.

Society News.—Dr. Harrison F. Flippin, Philadelphia, addressed the Dauphin County Medical Society, Harrisburg, February 4, on "Sulfathiazole and Sulfapyridine in the Treatment of Pneumonia."——Dr. Murray M. Copeland, Baltimore, addressed the Harrisburg Academy of Medicine, February 18, on "Clinical Management of Diseases and Tumors of the Breast."——Dr. Thomas Butterworth, Reading, addressed the Lebanon County Medical Society, Lebanon, February 11, on "Ten Most Common Skin Diseases."—— Dr. William Leo Mullins, Pittsburgh, addressed the Lawrence County Medical Society, New Castle, February 6, on "Some Coronary Problems."——Dr. John A. McKay, Mercer, addressed the Mercer County Medical Society, Greenville, February 12, on "The Nature and Present Status of the Filtrable Viruses."——Dr. Russell L. Cecil, New York, gave an address on "Recent Advances in Chemotherapy of Pneumonia" before the Cambria County Medical Society, Johnstown, February 13.

Philadelphia

Fellowship in Penal Psychiatry.—A fellowship in penal psychiatry under the Pennsylvania Plan for Intramural Training in Penal Psychiatry is available at the University of Pennsylvania. The fellowship is provided by the Commonwealth Fund, will run two years and carries a stipend of $2,400 the first year and $2,800 the second year. Minimal qualifications

specify a graduate physician not older than 35, having accredited internship and at least two years of acceptable psychiatric training. Address inquiries to Dr. Philip Q. Roche, secretary of the committee on medicolegal fellowships, 255 South Seventeenth Street, Philadelphia.

Marriage Counsel Service.—Marriage Counsel, a nonprofit-making community service, was started in 1932. The methods used are individual interviews, group talks, a lending library of selected books and pamphlets on marriage and family relationships, and the publication of articles evaluating and interpreting this service. The Marriage Counsel is supported by fees, by membership and by voluntary contributions. Fees are an almost negligible source of support, however, a report points out. The agency has participated in yearly courses in family relationships in several colleges. Seminar discussion groups have been held for physicians, ministers and teachers. A recent report states that there are about twenty-seven recognized counseling services in the United States. Dr. Frederick H. Allen is chairman of the executive board of sponsors of the Philadelphia organization and the counselors are Mrs. Stuart Mudd and Drs. Elizabeth Kirk Rose and Robert A. Matthews. The headquarters are at 253 South Fifteenth Street.

TEXAS

Spring Clinical Conference.—The Dallas Southern Clinical Society will sponsor its thirteenth annual spring clinical conference, March 17-20, with headquarters at the Hotel Adolphus. There will be twelve guests who will give addresses at general assemblies. There will be also lectures by Dallas physicians, round table luncheons and clinics each afternoon. The guests will be:

Dr. Clifford J. Barborka, associate in medicine, Northwestern University Medical School, Chicago.
Dr. Soma Weiss, Hersey professor of the theory and practice of physic, Harvard Medical School, Boston.
Dr. William E. Chamberlain, professor of radiology and roentgenology, Temple University School of Medicine, Philadelphia.
Dr. Harry Goldblatt, professor of experimental pathology and associate director, Institute of Pathology, Western Reserve University School of Medicine, Cleveland.
Dr. Henry G. Poncher, associate professor of pediatrics, University of Illinois College of Medicine, Chicago.
Dr. Marion B. Sulzberger, assistant clinical professor of dermatology and syphilology, New York Post-Graduate Medical School, Columbia University, New York.
Dr. Leland S. McKittrick, instructor in surgery, Harvard Medical School, Boston.
Dr. John J. Morton Jr., professor of surgery, University of Rochester School of Medicine and Dentistry, Rochester, N. Y.
Dr. James C. Sargent, clinical professor and director of the division of urology, Marquette University School of Medicine, Milwaukee.
Dr. Norman F. Miller, professor of obstetrics and gynecology, University of Michigan Medical School, Ann Arbor.
Dr. Derrick T. Vail Jr., professor of ophthalmology, University of Cincinnati College of Medicine.
Dr. Fletcher D. Woodward, professor of diseases of the ear, nose and throat, University of Virginia Department of Medicine, Charlottesville.

There will be a smoker on the first evening, and the annual banquet will be held Thursday evening, March 20.

GENERAL

Society News.—Dr. Ruth E. Boynton, Minneapolis, director of the student health service, University of Minnesota, was recently reelected president of the American Student Health Association.——The annual meeting of the American Industrial Hygiene Association will be held the week beginning May 5 in Pittsburgh. Gordon C. Harrold, Ph.D., Industrial Hygiene Laboratory, Chrysler Corporation, 7900 Joseph Campau Avenue, Detroit, is the secretary.——Dr. Harold M. Camp, Monmouth, Ill., is the new president of the National Conference on Medical Service and Dr. Joseph D. McCarthy, Omaha, secretary. The conference met at the Palmer House, Chicago, February 16.

Bowling Tournament Suggested for Cleveland Session.—The organization of an American Medical Bowling Association has been suggested with a view to holding a tournament each year during the annual session of the American Medical Association. The suggestion comes from Los Angeles, where the Medical Bowling League has been formed among members of the Los Angeles County Medical Association. A team of five men from each state is invited to meet this year in Cleveland for the first tournament and to organize the American Medical Bowling Association. Bowlers who may be interested are asked to communicate with Dr. Lewis Wine Bremerman, 1709 West Eighth Street, Los Angeles.

Biologists Propose Pan American Cooperation.—The trustees of *Biological Abstracts* recently approved a plan to make a set of volumes of that publication available at a reduced price to persons, foundations and institutions who may wish to send such sets to South American institutions, according to an announcement by Dr. Anton J. Carlson, Chicago, president of the Union of American Biological Societies. Writing in *Science*, Dr. Carlson pointed out that there are about one hundred and fifty bona fide research and educational institutions in Latin America which do not subscribe to the abstracts because of lack of funds or inequality in monetary exchange value. Organizations or persons interested in this plan can obtain a list of the institutions from John E. Flynn, Ph.D., Editor in Chief of *Biological Abstracts*, University of Pennsylvania, Philadelphia.

Amory Fund Award.—The American Academy of Arts and Sciences announces the first award of the septennial prize of the Amory Fund to four scientists for their contributions to the treatment and cure of diseases of the genitourinary system. The recipients are Dr. Joseph F. McCarthy, professor of urology, New York Polyclinic Medical School and Hospital, New York; Carl R. Moore, Ph.D., professor of zoology, University of Chicago; Dr. Hugh H. Young, professor of urology, Johns Hopkins University School of Medicine, Baltimore, and a European scientist whose name is withheld for the present because he lives in a country dominated by Nazi Germany. The prize money, which is the income from a fund established in 1912 by the late Francis Amory of Beverly, Mass., amounts to nearly $16,000 and will be divided equally among the four scientists, that for the European recipient being held in trust for him in this country. The award covers contributions made since 1933. Dr. McCarthy was honored for his development of technical instrumental procedures for the examination, diagnosis and treatment by way of the urethra, without external incision, of certain diseases of the bladder, prostate and related organs. Dr. Moore's investigations concerned the physiology of the male reproductive tract, especially as it is influenced by the hormonal secretions of the male sex gland. Dr. Young was cited for the operation of total prostatectomy by the perineal approach, which he devised and perfected for the relief of obstruction to the outlet of the urinary bladder caused by cancer of the prostate gland.

Surgical Supply Firms Indicted.—A federal grand jury sitting in Philadelphia returned an indictment, February 17, charging the American Surgical Trade Association, twelve of its officers and agents and twenty-four corporations in the surgical supply industry, members of the association, with violations of sections 1 and 2 of the Sherman Act. The indictment charges that the defendants, through membership in the American Surgical Trade Association, control the sale of approximately 95 per cent of all surgical supplies and have conspired to limit and prevent the production and sale of articles of surgical supplies which were imitations or copies of other articles. It is alleged that this result has been accomplished by a registration plan under which any member of the association could register any article of surgical supplies which was first produced by the member; by an agreement that no member would produce or sell for five years any article that was an imitation or copy of any article registered with the association, and by a threat to boycott all articles that were imitations or copies of those registered with the association. The indictment also charges that this plan gives to each member who has registered an article a monopoly of five years in the production and sale of that article. The indictment alleges that the effects of the combination and conspiracy have been to restrain substantially and unreasonably the production and sale of articles of surgical supplies which were imitations or copies of articles registered with the association, to prevent normal competition and to give to each member who has registered an article a five year monopoly, thereby giving members the power to control the supply and price of the registered articles. The defendants, each of whom is named in both counts of the indictment, are the American Surgical Trade Association, W. D. Allison Company, A. S. Aloe Company, American Metal Furniture Company, Bard-Parker Company, Randall Faichney Corporation, Gomco Surgical Manufacturing Corporation, W. A. Baum Company, Inc., Clay-Adams Company, Inc., Glasco Products Company, Hamilton Manufacturing Company, Fred Haslam and Company, Inc., Jetter and Scheerer Products, Inc., Kny-Scheerer Corporation, E. B. Meyrowitz Surgical Instruments Company, National Electric Instrument Company, Inc., George P. Pilling & Son Company, Prometheus Electric Corporation, Scanlan Morris Company, J. Sklar Manufacturing Company, Storz Instrument Company, Edward Weck & Company, Zimmer Manufacturing Company and the following individuals: H. N. Bowman, Henry E. Reeves, William D. West, Fred B. Hovey, Oscar F. Cochrane, James Brown, David L. McKean, William H. Tooher, George W. Wallerich, William Herzog, Joseph A. Miner and Edward W. Roehm.

Foreign Letters

AUSTRALIA

(From Our Regular Correspondent)

Dec. 6, 1940.

Limitation of Medical Students

The question of limiting the number of students admitted to the faculty of medicine has been discussed in many parts of the world during recent years for various reasons. In New Zealand, however, the problem is an immediate and a practical one. The number of students wishing to study medicine this year is almost double that which the Otago school (the only one in the dominion) can accommodate. The question is serious, since it involves the refusal to some people who desire it of the opportunity to be trained as doctors. It is no function of a medical school to decide how many it is to turn out: some schools indeed train mainly for export; but, since funds and accommodation were limited, it was surely the duty of those responsible for the design and development of the Otago school, which had no such ambitions, to form an estimate of the number of doctors the country was likely to require in the visible future and build accordingly. It was thought that an annual list of sixty qualified men per annum would satisfy all requirements. If the population is a million and a half it should be adequately served by fifteen hundred doctors: if twenty-five years is an average period of practice—a low estimate—an output of sixty per annum will maintain that number. The medical school then was constructed to accommodate sixty students in a year, but it now is receiving over one hundred, with considerable inconvenience. To extend accommodation would cost a great deal of money, a proposal to which the government is entirely averse. It is possible, moreover, that the present increase in enrolments has only temporary causes. In the first place there is the war, and many parents with adolescent sons, often only one, are anxious to put them into a reserved occupation where they may avoid the war altogether and which will enable them to serve, if need be, with the advantages of commissioned officers and in a noncombatant branch. In the second place there is the social security act. This does not establish a state medical service, but in the eyes of the public it establishes something like it. And the civil service in New Zealand is popular with the public. It is not likely that a state medical service will require a large permanent increase in the profession, and the falling birth rate combined with war casualties must surely point to a reduced rather than an increased need for future doctors. It seems then that a second school is not necessary, and limitation of students at Otago is therefore inevitable. A previous attempt to limit the influx of students in 1930 was not found satisfactory.

Proposed Fortification of White Flour with Synthetic Thiamine

Following the decision of the Ministry of Health in Great Britain that all white flour shall be fortified nutritionally by the addition of synthetic vitamin B_1, it was suggested that the Australian people might benefit by a similar means. The Nutrition Committee of the National Health and Medical Research Council considered the proposal fully but decided that the addition of synthetic vitamin B_1 alone to white flour involves a wrong principle. It is well known that there are many instances in which mixtures occurring in natural products have a more beneficial effect than the administration of the isolated single substances, e. g. in the treatment of pellagra, in which it has been found that, whereas the primary deficiency is of nicotinic acid, the best results are obtained by the administration of additional members of the vitamin B complex. There is no evidence that thiamine produces its complete nutritional effect by its own unaided physiologic action or that it is any more deficient in the diet of the general Australian community than any other members of the B complex and other substances necessary for normal nutrition. Instead it is recommended strongly that an investigation be made into the possible use as additions to the diet of Australian products such as cereal by-products, dried skim milk and other sources of the B complex rather than the use of imported synthetic products, since such by-products would supply other known essentials besides vitamin B_1. It is also recommended that, since investigations at the Institute of Anatomy, Canberra, have indicated that the B content of Australian wheats is higher than that of wheats examined in England, and, further, since different varieties of Australian wheats show differences in content, that the vitamin B_1 content of the chief varieties of Australian wheats and wheat products be determined without delay. The council has allotted a grant for the work. The investigation will cover all those aspects of the reinforcement of vitamin B complex of flour for bread making which are necessary to insure the production of bread which is nutritionally adequate, of good baking and keeping qualities and acceptable to the public taste.

Epidemiology of Q Fever

Further investigations into the epidemiology of Q fever have yielded interesting facts. The testing of serums for agglutination with an emulsion of Rickettsia burneti has provided a useful means not only of diagnosing human illness but also of determining the incidence of infection in various human and animal populations. Agglutinins may be detected in human serums for some months after an obvious attack of Q fever, and they may also be found in cases in which infection has not been apparent.

Out of a total of 180 bandicoot (Isoodon torosus) serums examined, 39 were found to agglutinate. This evidence of a high incidence of Q fever among bandicoots confirms the important role that this animal plays in the spread of the disease. The incidence of agglutination was much greater in bandicoots captured at Cowan Cowan on Moreton Island than in those captured on the mainland, a fact correlated with their high infestation with the tick Haemaphysalis humerosa. Out of a series of cattle serums tested, one was completely positive at a 1:10 dilution. The owner of this cow had had Q fever himself six months previously.

Surveys of human serums were made with serum from abattoir workers in Brisbane and of forestry workers at Imbil. The abattoir was chosen because most of the cases of Q fever have come from there. Of the serums from 79 volunteers, 18 showed agglutination. Four of these workers were known to have had Q fever; 8 had had a previous febrile illness, not investigated at the time, which may have been Q fever; 6 were not aware of having had any fever. Thus infection with R. burneti may take a symptomless or inapparent course.

Most Q fever patients have had contact with cattle or pigs, and it seems likely that the cattle in some way convey the infection to dairy or abattoir workers from the bush, particularly from scrub (rain forest) areas. To investigate the possibility of workers in the scrub contracting Q fever without intermediate cattle contact, the forestry workers at Imbil were examined. (Three of 36 rural cases of Q fever have been among timber workers.) Of 64 serums tested, 6 showed the presence of agglutinins for R. burneti. Two of the 6 men gave no history of fever, confirming the existence of human Q infection in an inapparent form. Also an examination was made of the blood of 186 militia men stationed temporarily at Cowan Cowan. Failure to find any agglutination in the serums tested suggests that H. humerosa does not readily attack men —at least where its natural host is available—and consequently is not likely to be a common cause of direct human infection.

Praise for American Medicine

High praise for the hospitality and clinical opportunities freely given for postgraduate work to visitors in America is given by Dr. Kate Mackay, who recently returned to Australia after a postgraduate tour. As well as the clinics, which serve as a model to the rest of the world, and the well equipped research laboratories, Dr. Mackay was impressed by the knowledge which all Americans have of their own case histories. They are not introspective, she says, but well trained in general medical knowledge. This she attributes largely to the number of popular scientific articles which appear regularly in papers written with the approval of medical men and to public lectures given by well known members of the medical profession. Australian graduates generally are fully appreciative of the hospitality and opportunities for acquiring knowledge afforded to medical graduates visiting America.

The Control of Unscientific Advertising

A subcommittee on unscientific advertising was set up by the New South Wales committee of the Australian Association of Scientific Workers with the object of discouraging the use of statements contrary to, or unsupported by, scientific facts in advertising matter broadcast or published in this state. The subcommittee decided in the first instance to attempt to gage the attitude of the newspapers and the radio stations toward its proposed activities and also to seek the cooperation of the British Medical Association and the Pharmaceutical Association of New South Wales, since much of the objectionable advertising matter is concerned with "patent medicines" and other medical goods. Accordingly, the aforementioned bodies were circularized with the following results:

1. The British Medical Association promised its cooperation.

2. The Pharmaceutical Association sent a guarded reply requesting more information.

3. Sydney *Morning Herald,* Associated Newspapers, Ltd. (the *Sun*), Consolidated Press, Ltd. (the *Telegraph*) and the *Bulletin* indicated general approval of the aims of the subcommittee. *Truth, Ltd.* and *Smith's Weekly* did not reply. In one reply it was suggested that the Australian Association of National Advertisers should be informed of the subcommittee's activities.

4. The commercial radio stations indicated that negotiations with the radio industry would best be carried out through the Australian Federation of Commercial Broadcasting Stations.

Further correspondence was therefore undertaken with the two bodies mentioned. The Secretary of the Australian Federation of Commercial Broadcasting Stations, in reply, stated that the matter would be put before the federation at its next meeting in November. Enclosed in the reply was a brochure, "Standards of Advertising Practice Adopted by the Commercial Radio Advertising Board." The following rules may be quoted from this brochure:

RULE 1.—Medical Advertisements: No advertising shall contain any matter which in any way departs from the truth as to the character of the product or its suitability for the purposes for which it is recommended. Further, no untruthful implications may be imported into any advertising matter.

RULE 12.—In addition to the foregoing conditions in respect of medical advertisements, commercial stations are bound not to accept any script, continuity, advertising copy, recorded commercial announcements and such matter for broadcast which introduces or incorporates:

(*d*) False or questionable statements or any other forms of misrepresentation.

(*i*) Statements or claims, known or believed to be false, deceptive or grossly exaggerated.

It will be seen that these rules provide an adequate mechanism for the elimination of unscientific statements from radio advertising; but the Commercial Radio Advertising Board, as constituted at present, apparently contains nobody competent to judge the truth of a statement couched in scientific terms.

The subcommittee of the Australian Association of Scientific Workers expressed the opinion that definite proposals should be put before the federation at its November meeting. Two courses of action are suggested:

1. The A. A. S. W. might point out to the federation those statements to which it objects and leave to the latter body any further action according to the rules that have been quoted.

2. Or, adopting a more positive policy, the A. A. S. W. might set up a body analogous to the American Medical Association's Council on Foods and Nutrition. Such a body would report on all advertising matter submitted to it or already incorporated in radio programs. Advertisers would then be permitted to use, in connection with broadcast advertising, a statement signifying that the matter had received the approval of the A. A. S. W. and, in conjunction with the printed advertising, suitable insignia also indicating the approval of the A. A. S. W.

The reply received from the Australian Association of National Advertisers expressed a desire to know more of the aims and objects of the subcommittee and included an invitation for three delegates from the Australian Association of Scientific Workers to meet the executive committee of the Australian Association of National Advertisers on a date to be arranged.

First Queensland Medical Students Graduate

The first of the students to graduate from the newly established Medical School of the University of Queensland will receive their degrees next week. Twenty students now have passed their final examination and are qualified to take up medical positions—positions in which they are urgently needed, as the calling up of medical men for military duties has resulted in a shortage of practitioners available for civilian duties. These graduates are well equipped to enter the profession. In the new medical school an attempt has been made to give expression to ideals which have for some time appealed to the teachers in older schools. The opportunity has been taken not only to bridge the gap between the medical sciences and clinical practice, to establish the closest link between the teaching of physiology and the problems of the general practitioner, but also to establish from the beginning of the subject a policy of progressive and coordinated transition. The incoming student armed with a knowledge of fundamental physical, chemical and biologic conceptions is first led to apply these to cellular behavior. He then proceeds to study groups of cells working together as organs, organs coordinated as systems and systems integrated into an intact organism. Finally, he discovers how this integrated being reacts to the vicissitudes of normal and abnormal environments. Also these students have been required to take an extensive course in social and tropical medicine in order that they may be equipped to deal adequately with Queensland's special problems relating to its tropical climate.

Wartime Supply of Medical Equipment

The possibility of a serious shortage in Australia of stocks of those items of medical equipment which could not be manufactured here was foreseen by Major General Downes, who, in collaboration with the Commonwealth Department of Health, obtained approval for the expenditure in January 1939 of £73,000 for the purchase of certain drugs and instruments which were to be held in reserve for emergency. The drugs included the more important alkaloids, local anesthetics, various antiseptics, arsenical preparations, sulfanilamides, sedatives, calomel, salyrgan, metrazol and nikethamide. The instruments were of types which could not be manufactured locally, such as thermometers, suture needles and syringes. Now, with the notable exception of hypodermic syringes, all the items in the list have been supplied and constitute a valuable reserve today.

Another prewar action was to constitute a medical equipment subcommittee of the Central Committee for the Coordination of Medical Services in Time of War. This subcommittee was given the task of investigating every problem relating to the supply of medical equipment and reporting to the central committee. Since the outbreak of the war, however, it has been given executive authority as an independent medical equipment control committee. This body is composed of a chairman, who must be a medical officer of the defense force, and one representative of each of the Commonwealth Department of Health, the Department of Supply and Development and the Department of Trade and Customs, and the British Medical Association. For the purpose of insuring an adequate supply of medical equipment for the navy, army and air force and the civil population of Australia, this committee may make orders to regulate, restrict or prohibit the production, storage, distribution, sale, purchase and use of medical equipment. Already it has exercised its powers considerably, and with the cooperation of doctors and pharmacists, whom it urges to "improvise and economize," Australia should not suffer any serious shortage.

Hospitality for Doctors' Children

In view of the war in Great Britain, Australian doctors have offered to take into their homes up to five hundred British children under 16 either unaccompanied or accompanied by their mothers. Selection is being undertaken by the British Medical Association. Parents will be responsible for the passage money, and individual arrangements will be made about the cost of education and maintenance. This is essentially a private scheme to place doctors' children in doctors' homes and is quite separate from the official evacuee scheme. The British Medical Association will arrange for transportation, and it will also act as a medium for obtaining the passports.

Fatal Case of Quinine Poisoning

It is well known that toxic effects may result from overdoses of quinine, but the fact that they may prove fatal, especially to children, is perhaps not so generally recognized. A case was recently reported in New Zealand. A child aged 1 year and 8 months accidentally gained possession of a bottle of quinine tablets belonging to his mother. When the woman noticed the fact and also that he must have swallowed several she immediately fed him with strong salt solution and olive oil. This would not make the child vomit, however, and he was taken to a doctor. After examining the boy, the doctor pronounced him all right and told the mother to take him home and give him another emetic. While this was being prepared, the child's lips turned blue, his body became limp and he died at once (less than two hours after the accident was discovered). Postmortem examination showed that he was a well nourished child free from evidence of organic disease. In the stomach was a fairly bulky dry meal of potatoes and vegetables but no pills or tablets. In the first 3 or 4 feet of intestine, 10 pills were found in various stages of disintegration, together with a few fragments of the meal in the stomach. It is interesting to notice that these pills passed through the full stomach to the intestine, so that emesis or even gastric lavage would have been of no avail. An analysis of some of the original tablets showed that they contained between 5 and 6 grains (0.35 Gm.) each of quinine bisulfate. No alkaloid other than quinine was detected in any of the analyses. The rapidity with which the quinine was absorbed from the small intestine is commented on. From the remains of 8 tablets (40 grains, or 2.6 Gm.) only 4 grains (0.26 Gm.) could be recovered on analysis. This is in accord with the idea that quinine is stored for only a short time in the various organs before being destroyed. The child may even have swallowed more than 40 grains.

BUCHAREST

(From Our Regular Correspondent)

Oct. 28, 1940.

Bachelor Tax in Bulgaria

The Bulgarian chamber of deputies passed a bill according to which the bachelor tax will be raised by 20 per cent. Exception will be made with men who were advised by the so-called marriage consulting bureaus not to marry. The property of bachelors is inherited by the state. Illegitimate children of bachelor fathers inherit a certain percentage of the property if paternity has been recognized by the bachelor. Unmarried persons older than 25 years cannot occupy any government position.

The Public Health Balance of the Past Year

In 1939 one hundred public health districts were established and the organization of the public health affairs of the capital city, Bucharest, were arranged according to the model supplied by the Rockefeller Foundation. In ten counties public health model districts have been established. Besides the sums computed in the budget for drugs, 60,000,000 lei was spent, especially for the campaign against malaria and syphilis. For prophylactic work in villages besides the twenty-five bath trains already extant, ten new trains have been installed. Twenty portable bacteriologic laboratories, twenty-four portable roentgen ray laboratories, one hundred and thirty-two microscopes, three hundred and twenty delousing ovens and twenty-five steam disinfectors have been purchased. For the nursing of patients seven hundred oxygen outfits, one thousand four hundred oxygen cylinders and six hundred pumps filled with oxygen have been put in operation. New hospital pavilions were erected at nine small cities. A sanatorium for tuberculosis patients has been erected at Valea Jasului, a special hospital for pellagra patients in Pitesti, and one for leprous patients in Tichilesti-Tulcea. In Bucharest a cancer center has been built. Sixty-three dispensaries have been established with baths. Ten model dispensaries are in the course of construction. Twenty million lei has been distributed among the provinces for making safe wells in villages. For the study of the nutrition of the peasantry fifty-six woman inspectors did exploratory work in four counties, namely, Arges, Turda, Romanati and Lapusna. In the villages anti-scarlet fever inoculations have been introduced and 900,000 children inoculated; 1,267,678 diphtheria antitoxin vaccinations have been given; thirty-seven antirabic centers were established in different parts of the country. At present plans are being made for the construction of ten hospitals for venereal diseases and four hospitals for the treatment of patients suffering from tuberculosis. Seven hundred and thirty puericultural dispensaries have been established, where during one year 126,971 sick children have been examined. The children were visited also at their homes in 460,035 instances. The ministry of public health has distributed an immense quantity of underwear and clothing.

Marriages

CONRAD KEISTER CLIPPINGER, Dayton, Ohio, to Miss Norma Eileen Schuesselin of Piqua in November 1940.

BUFORD SOUTER CHAPPELL to Miss Mary Marjorie Cooper, both of Columbia, S. C., in November 1940.

HENRY CLAY DORRIS to Miss Betty S. Aycock, both of Atlanta, Ga., in November 1940.

WILLIAM H. HYDEN, Auxier, Ky., to Miss Bess Long Ardery of Paris in November 1940.

ALBERT R. ANDRISEK to Miss Lillian Sindelar, both of Cleveland, in November 1940.

PAUL J. DWAIHY, Detroit, to Miss Rae Nader at Cleveland in November 1940.

Deaths

Frank James Kinberger, New Orleans; Tulane University School of Medicine, New Orleans, 1908; member of the Louisiana State Medical Society; clinical assistant in diseases of children from 1912 to 1914, lecturer and instructor in diseases of children from 1914 to 1923 and assistant professor of clinical pediatrics at his alma mater from 1923 to 1940; first secretary of the Louisiana State Pediatric Society; pediatrician with the city board of health; delegate from New Orleans to the White House Conference on Child Health and Protection called by President Hoover in 1930; on the staffs of the Touro Infirmary and the Mercy Hospital, Baptist Hospital and the Charity Hospital; aged 53; died, Dec. 5, 1940, of cardiovascular disease and uremia.

Charles Bryant Cooper, Honolulu, Hawaii; Missouri Medical College, St. Louis, 1889; member of the Hawaii Territorial Medical Association; formerly police and prison physician for the Hawaiian government; joined the National Guard of the territory and served as surgeon general from 1903 to 1917; during the World War, entered the federal service in February 1918, serving in an advisory capacity with the territorial government at Honolulu and of the examining board; was discharged as a lieutenant colonel in December 1918; was later commissioned a colonel of the medical reserve; was chief surgeon of the Hawaiian Railroad; aged 76; died, Nov. 9, 1940, at his home at Aiea.

Kate Campbell Hurd Mead ✠ Haddam, Conn.; Woman's Medical College of Pennsylvania, Philadelphia, 1888; consulting gynecologist, Middlesex Hospital, Middletown, from 1907 to 1925; past president of the Public Health Association of Haddam; past president of the Middlesex County Medical Society; corresponding secretary of the Medical Women's International Association; past president of the American Medical Women's Association; author of "Medical Women of America" and "History of Women in Medicine; aged 73; died, January 1.

Carl Lewis Wheeler, Lexington, Ky.; Hospital College of Medicine, Louisville, 1897; member of the House of Delegates of the American Medical Association in 1913, from 1916 to 1919 and in 1922; member of the Kentucky State Medical Association and the American Urological Association; fellow of the American College of Surgeons; past president of the Fayette County Medical Society; at one time health officer; aged 67; on the staffs of St. Joseph's Hospital and the Good Samaritan Hospital, where he died, Dec. 15, 1940.

Isaac Arnold Withers, Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1898; member of the State Medical Association of Texas; past president of the Tarrant County Medical Society; past president of the state board of medical examiners; veteran of the Spanish-American and World wars; on the staff of the All Saints Episcopal Hospital and the City and County Hospital; aged 65; died, Dec. 1, 1940, of carcinoma of the lungs.

Harry Beecher McCorkle, Santa Rosa, Calif.; Marion-Sims College of Medicine, St. Louis, 1898; member of the Colorado State Medical Society; fellow of the American College of Physicians; at one time mayor of Billings, Okla.; formerly on the staffs of the Beth El and Glockner hospitals, Colorado Springs, Colo.; aged 70; died, Dec. 25, 1940, in the General Hospital of bronchopneumonia and influenza.

George William Pressly, Verdery, S. C.; Jefferson Medical College of Philadelphia, 1892; member of the Medical Society of the State of North Carolina; secretary of the state board of medical examiners from 1902 to 1906; fellow of the American College of Surgeons; aged 70; died, Dec. 17, 1940, in the Veterans Administration Facility, Augusta, Ga., of bronchopneumonia and pulmonary tuberculosis.

Edward Nelson McKee ✠ Los Angeles; College of Physicians and Surgeons, Keokuk, Iowa, 1895; member of the Radiological Society of North America; for many years on the staff of the Methodist Hospital; served during the World War; aged 72; died, Dec. 22, 1940, in the Glendale (Calif.) Sanitarium and Hospital of aplastic anemia due to roentgen rays.

George Hanting Rockwell, Syracuse, N. Y.; Syracuse University College of Medicine, 1901; member of the Medical Society of the State of New York; formerly assistant professor of otolaryngology at his alma mater; on the staff of the Syracuse Memorial Hospital; aged 62; died, Dec. 30, 1940, of carcinoma of the bladder and coronary thrombosis.

Henry Carl Prill, Cleveland; Ohio State University College of Homeopathic Medicine, Columbus, 1915; member of the Ohio State Medical Association; fellow of the American College of Surgeons; on the staff of the Huron Road Hospital; aged 48; was found dead, Dec. 3, 1940.

Paul Hamilton Phillips, Ashdown, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1904; member of the Arkansas Medical Society; president of the Little River County Medical Society; aged 59; died, Dec. 30, 1940, in a hospital at Texarkana.

Harry Ernshaw Gettier ✠ Littlestown, Pa.; Baltimore Medical College, 1897; past president of the Adams County Medical Society; veteran of the Spanish-American War; aged 70; on the staff of the Annie M. Warner Hospital, Gettysburg, where he died, Dec. 26, 1940, of prostatic obstruction and chronic myocarditis.

Joseph Gregory Elias Page, Southbridge, Mass.; School of Medicine and Surgery of Montreal, Que., Canada, 1895; member of the Massachusetts Medical Society; formerly member of the board of health, member of the school committee and bank president; aged 69; died, Dec. 28, 1940, of coronary thrombosis.

David E. Shields, Morristown, Tenn.; Vanderbilt University School of Medicine, Nashville, 1883; University of Nashville (Tenn.) Medical Department, 1884; member of the Tennessee State Medical Association; past president of the Hamblen County Medical Society; aged 82; died, Dec. 22, 1940, of pneumonia.

Sterling Price Bond ✠ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1912; fellow of the American College of Surgeons; on the staffs of the Children's Hospital, St. Vincent's Infirmary and the Pulaski County Hospital; aged 51; died, Dec. 5, 1940, of hypertensive heart disease.

Robert Hector, Berkeley, Calif.; University of California Medical Department, San Francisco, 1904; was acting health officer of Berkeley from 1913 to 1917; aged 65; on the staff of the Berkeley Hospital, where he died, Dec. 12, 1940, of injuries received when gases in the oil furnace in his home exploded.

Thomas Pickens Russell, Center Line, Mich.; University of Alabama School of Medicine, University, 1911; member of the Michigan State Medical Society; past president of the Macomb County Medical Society; aged 67; died, Dec. 24, 1940, in the Grace Hospital, Detroit, of coronary occlusion.

J. C. F. Siegfriedt, Red Lodge, Mont.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; mayor; served during the World War; formerly state senator; aged 61; was found dead, Dec. 10, 1940, of subacute bacterial endocarditis.

Frank Hermann Warncke ✠ Elizabeth, N. J.; University and Bellevue Hospital Medical College, New York, 1904; aged 59; on the staff of the Alexian Brothers Hospital, St. Elizabeth Hospital and Elizabeth General Hospital, where he died, Dec. 26, 1940, of aortic aneurysm.

Vernon Offutt Heddens ✠ Pasadena, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1915; served during the World War; on the staff of the Huntington Memorial Hospital; aged 52; died, Dec. 11, 1940, of bronchopneumonia and coronary thrombosis.

Albert B. Leigh ✠ Kaukauna, Wis.; University of Illinois College of Medicine, Chicago, 1927; fellow of the American College of Surgeons; aged 39; on the staff of St. Elizabeth Hospital, Appleton, where he died, Dec. 14, 1940, of a streptococcic infection.

Joseph Ansley Gustafson ✠ Orion, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; aged 67; on the staff of the Lutheran Hospital, Moline, where he died, Dec. 24, 1940, of coronary thrombosis.

Howard Lee Metcalf ✠ Springfield, Ill.; Rush Medical College, Chicago, 1904; past president of the Sangamon County Medical Society; on the staffs of St. John's Hospital and the Springfield Hospital; aged 64; died, Dec. 15, 1940, of coronary sclerosis.

George E. Parker, Benson, N. C.; College of Physicians and Surgeons, Baltimore, 1886; member of the Medical Society of the State of North Carolina; past president of the Johnston County Medical Society; aged 78; died, Dec. 15, 1940, of heart disease.

Manney Murdock Rice, Columbia, S. C.; University of Maryland School of Medicine, Baltimore, 1906; member of the South Carolina Medical Association; formerly member of the city council; aged 60; died, Dec. 25, 1940, of chronic myocarditis.

William Oliver Smith, Altavista, Va.; University College of Medicine, Richmond, 1898; member of the Medical Society of Virginia; aged 71; died, Dec. 17, 1940, in the Virginia Baptist Hospital, Lynchburg, of gastric hemorrhage and arteriosclerosis.

Thomas Lamar Harris, Wrightsville, Ga.; University of Georgia Medical Department, Augusta, 1881; for many years justice of the peace; formerly mayor; also a lawyer; aged 78; died, Dec. 12, 1940, in a hospital at Sandersville.

William Rudolph Wegert, Unionville, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1899; Saginaw Valley Medical College, Saginaw, Mich., 1901; aged 82; died, Dec. 21, 1940, of chronic myocarditis.

Ola Adolphus Kibler, Chicago; St. Louis College of Physicians and Surgeons, 1906; member of the Illinois State Medical Society; for many years on the staff of the Chicago State Hospital; aged 59; died, Dec. 15, 1940.

Edgar A. McCombs, Connellsville, Pa.; University of Louisville (Ky.) Medical Department, 1907; member of the Medical Society of the State of Pennsylvania; aged 58; died, Dec. 17, 1940, in the Connellsville State Hospital.

Charles Dean Laidlaw, Canton, N. Y.; Syracuse University College of Medicine, 1902; member of the Medical Society of the State of New York; on the staff of the Potsdam (N. Y.) Hospital; aged 62; died, Dec. 13, 1940.

Lawrence Henry Fitzgerald ✠ Temple, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1917; served during the World War; aged 45; died, Dec. 31, 1940, in a hospital at Reading of multiple myeloma.

Hildegard Gertrude Henderson, San Francisco; University of California Medical School, San Francisco, 1928; for many years on the staff of the Children's Hospital; aged 50; died, Dec. 3, 1940, of cerebral hemorrhage.

Asa Witter Montgomery, Stella, Neb.; Rush Medical College, Chicago, 1896; past president of the Richardson County Medical Society; formerly mayor; aged 68; died, Dec. 3, 1940, in St. Catherine's Hospital, Omaha.

Lyman Averill Cheney, Washington, D. C.; University of the City of New York Medical Department, 1882; aged 79; died, Dec. 28, 1940, in the Garfield Hospital of carcinoma of the prostate and retroperitoneal glands.

John Frederick Simpson, Brooklyn; Bellevue Hospital Medical College, New York, 1895; member of the Medical Society of the State of New York; aged 74; died, Dec. 31, 1940, in the Wyckoff Heights Hospital.

Yearslaf J. Fencil ✠ Casco, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1912; for many years member of the school board; aged 57; died, Dec. 26, 1940, in Green Bay of angina pectoris.

Percy James Sandys Bird, Weyburn, Sask., Canada; University of Dublin School of Physic, Trinity College, Dublin, Ireland, 1900; member of the American Psychiatric Association; aged 63; died, Nov. 18, 1940.

Orlando Velpeau Langley, Loachapoka, Ala.; Baltimore Medical College, 1893; served during the World War; for many years associated with the Veterans Bureau, New Orleans; aged 69; died, Dec. 29, 1940.

Mansfield Goldberg Levy, Buffalo; University of Buffalo School of Medicine, 1911; on the staffs of the Children's Hospital and the Memorial Hospital; aged 54; died, Dec. 31, 1940, of coronary thrombosis.

Wilson Harmon Button, Hubbard, Ohio; Western Reserve University Medical Department, Cleveland, 1885; formerly member of the board of education; aged 82; died, Dec. 12, 1940, of coronary thrombosis.

Frederick Horace Williams ✠ Boston; University of the South Medical Department, Sewanee, Tenn., 1901; on the staffs of the Brooks and Trumbull hospitals, Brookline; aged 67; died, Dec. 6, 1940.

Frank Lincoln Kenney, St. John, N. B., Canada; McGill University Faculty of Medicine, Montreal, 1888; for many years on the staff of St. John General Hospital; aged 76; died, Dec. 3, 1940.

Van William Burns ✠ Stuart, Fla.; University of Arkansas School of Medicine, Little Rock, 1932; on the staff of the Martin County Hospital; aged 38; died, Dec. 23, 1940, of malignant hypertension.

Siegfried A. Van Hoefen ✠ St. Louis; St. Louis College of Physicians and Surgeons, 1902; aged 63; on the staff of the Evangelical Deaconess Hospital; died, Dec. 16, 1940, of mesenteric thrombosis.

Carl Clifford Bickley, Waterloo, Iowa; Hahnemann Medical College and Hospital, Chicago, 1906; member of the Iowa State Medical Society; aged 58; died, Dec. 18, 1940, of coronary thrombosis.

Ernest Leslie Huse ✠ Meriden, N. H.; Dartmouth Medical School, Hanover, 1907; past president of the Sullivan County Medical Society; aged 60; died, Dec. 21, 1940, of coronary thrombosis.

John Luke Murphy ✠ Eastport, Maine; Medical School of Maine, Portland, 1909; past president of the Washington County Medical Society; aged 55; died, Nov. 7, 1940, of coronary thrombosis.

Jacob M. Bonnette ✠ Alexandria, La.; Memphis (Tenn.) Hospital Medical College, 1907; aged 61; died, Dec. 5, 1940, in the Baptist Hospital of carcinoma of the right lung with metastases.

Bertha Ladd Hoskins, Atlanta, Ga.; Boston University School of Medicine, 1896; aged 78; died, Dec. 13, 1940, in the Crawford W. Long Hospital of heart disease and bronchopneumonia.

Joseph Buford Boyer, Wilsonville, Ala.; Louisville (Ky.) Medical College, 1892; member of the Medical Association of the State of Alabama; aged 81; died, Dec. 15, 1940, of carcinoma.

Nicholas Young Bradford MacKenzie, Andover, N. H.; Dartmouth Medical School, Hanover, 1901; member of the New Hampshire Medical Society; aged 64; died, Nov. 27, 1940, in Franklin.

William H. Jones, Ashland, Kan.; Tennessee Medical College, Knoxville, 1900; member of the Kansas Medical Society; aged 63; died, Nov. 7, 1940, of coronary thrombosis and chronic nephritis.

James Otis Matthis ✠ Salem, Ore.; Memphis (Tenn.) Hospital Medical College, 1909; served during the World War; aged 55; was found dead, Dec. 5, 1940, of a bullet wound self inflicted.

Cora Luarky Stitt, Stockbridge, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1894; aged 70; died, Dec. 21, 1940, in the Sparrow Memorial Hospital, Lansing.

Snethen Burroughs Duggan, Murfreesboro, Tenn.; University of Tennessee Medical Department, Nashville, 1903; aged 59; died, Dec. 26, 1940, in the Veterans Administration Facility.

Benjamin Richard Lokke, Marenisco, Mich.; Rush Medical College, Chicago, 1922; aged 49; was killed, Dec. 30, 1940, when the automobile in which he was driving was struck by a truck.

M. Vernon Snyder, Chicago; Chicago College of Medicine and Surgery, 1912; member of the Illinois State Medical Society; aged 53; died, January 1, at Evanston, Ill., of coronary thrombosis.

Mark Anthony McGovern, Boston; Kansas City College of Medicine and Surgery, Kansas City, Mo., 1923; College of Physicians and Surgeons, Boston, 1927; aged 48; died, Nov. 12, 1940.

Lewis Rutherford Murray, Sussex, N. B., Canada; Jefferson Medical College of Philadelphia, 1892; served during the World War; at one time mayor; aged 70; died, Dec. 24, 1940.

Frank Browne Easley, Chattanooga, Tenn.; Harvard Medical School, Boston, 1927; member of the Tennessee State Medical Association; aged 39; was shot and killed, Dec. 29, 1940.

Harold G. Craig, Davidson, Sask., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1906; served during the World War; aged 60; died, Dec. 4, 1940, in Vancouver, B. C.

Charles Christian Dreyer, Toledo, Ohio; University of Wooster Medical Department, Cleveland, 1896; member of the Ohio State Medical Association; aged 70; died, Dec. 17, 1940.

Henry Wiedow, Twentynine Palms, Calif.; State University of Iowa College of Medicine, Iowa City, 1902; member of the California Medical Association; aged 68; died, Dec. 18, 1940.

Alex F. Williams, Cornerville, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; aged 62; died, Dec. 30, 1940, at Eupora, Miss., of coronary occlusion.

Reuben C. Brophy, Elgin, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1895; also a dentist; aged 85; died, Dec. 22, 1940, of an injury to the left leg and anemia.

G. M. Phelps, Kankakee, Ill.; College of Physicians and Surgeons of Chicago, 1885; aged 82; died, Dec. 27, 1940, in the Cottage Hospital, West Plains, Mo., of coronary sclerosis.

Morris Winheld ✠ Philadelphia; Baltimore Medical College, 1904; an Affiliate Fellow of the American Medical Association; aged 67; died, Dec. 23, 1940, in the Mount Sinai Hospital.

Edmund Eugene Robinson, Kannapolis, N. C.; Medical College of Virginia, Richmond, 1927; aged 38; was found dead, Dec. 27, 1940, as the result of a blow on the head.

Marmaduke Atkinson, Amelia C. H., Va.; Medical College of Virginia, Richmond, 1901; served during the World War; aged 60; died, Dec. 2, 1940, of chronic myocarditis.

Frederick Arthur Van Buren, Tucson, Ariz.; Northwestern University Medical School, Chicago, 1904; served during the World War; aged 64; died, Nov. 26, 1940.

Thomas Fitzgerald McNamara ✠ Rochester, N. Y.; University of Buffalo School of Medicine, 1902; aged 73; died, Dec. 25, 1940, of bronchopneumonia and myocarditis.

William Algernon Lavender, Birmingham, Ala.; Birmingham Medical College, 1909; member of the Medical Association of the State of Alabama; aged 67; died, Dec. 2, 1940.

Harry Francis Cleverly, Scituate, Mass.; Boston University School of Medicine, 1906; served during the World War; aged 62; died, Dec. 19, 1940, of coronary sclerosis.

James Herbert Briley, Springdale, Ark.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; aged 66; died, Dec. 26, 1940, of myocarditis.

Jefferson Monroe May, Hayesville, N. C.; Southern College of Medicine and Surgery, Atlanta, Ga., 1914; aged 49; died, Dec. 18, 1940, in a hospital at Marietta, Ga.

William E. Chambers, Cleveland; University of Toronto Faculty of Medicine, 1893; aged 72; died, Dec. 20, 1940, of diabetes mellitus and carcinoma of the pancreas.

Walter Robert Best, Scobey, Miss.; University of Virginia Department of Medicine, Charlottesville, 1897; aged 80; died, Dec. 4, 1940, in Greenwood of acute hemiplegia.

John Burr Talmage, Lawrenceburg, Ind.; Cleveland Homeopathic Medical College, 1903; served during the World War; aged 74; died, Dec. 4, 1940, of angina pectoris.

Clarence Elbert Hewitt ✠ Springfield, Mass.; Baltimore Medical College, 1897; aged 78; died, Dec. 18, 1940, in the Springfield Hospital of myelogenous leukemia.

James Clint Sumner, Roanoke, Va.; Medical College of Virginia, Richmond, 1909; aged 74; died, Dec. 4, 1940, in the Shenandoah Hospital of coronary thrombosis.

Edwin Paul Fagan ✠ Portland, Ore.; State University of Iowa College of Medicine, Iowa City, 1928; aged 38; died, Dec. 12, 1940, of a self-inflicted bullet wound.

Thomas Morrison Lawton, Berkley, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1884; L.R.C.P., Edinburgh, Scotland, 1884; aged 84; died, Dec. 19, 1940.

Lewis Wilbur Stidham, Alameda, Calif.; Rush Medical College, Chicago, 1891; aged 77; died, Dec. 9, 1940, of coronary thrombosis and arteriosclerotic heart disease.

James Thomas Breakey, Bonfield, Ill.; Jenner Medical College, Chicago, 1908; Chicago College of Medicine and Surgery, 1910; aged 64; died, Dec. 16, 1940.

Dana A. Sargent, Hopkins, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 86; died, Dec. 17, 1940, of a fracture of the hip received in a fall.

William H. Hord, Maysville, Ky.; University of Louisville Medical Department, 1886; aged 77; died, Dec. 31, 1940, in the Hayswood Hospital of cerebral hemorrhage.

Harry Hansell Preston ✠ Hot Springs National Park, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1928; aged 38; died, Dec. 8, 1940.

Huldah Josephine Prioleau, Charleston, S. C.; Howard University College of Medicine, Washington, D. C., 1904; aged 60; died, Dec. 14, 1940, of endocarditis.

Jane Smith Devereaux, Marblehead, Mass.; Boston University School of Medicine, 1880; aged 82; died, Dec. 26, 1940, of cerebral thrombosis and arteriosclerosis.

Norman Perry Mills, Appleton, Wis.; Rush Medical College, Chicago, 1897; member of the State Medical Society of Wisconsin; aged 67; died, Dec. 15, 1940.

Roy Newton Fuller ✠ Tulare, Calif.; Cooper Medical College, San Francisco, 1908; aged 56; died, Dec. 13, 1940, of heart disease and pulmonary tuberculosis.

Martin Jay Hanna, Baltimore; University of the South Medical Department, Sewanee, Tenn., 1908; aged 53; died, Dec. 2, 1940, of carcinoma of the larynx.

Bart Wayne Freer, Fort Smith, Ark.; Memphis (Tenn.) Hospital Medical College, 1902; member of the Arkansas Medical Society; aged 70; died, Dec. 29, 1940.

Lenora May Benton Hamly, Denver; Gross Medical College, Denver, 1897; aged 79; died, Nov. 29, 1940, in Port Alberni, B. C., Canada, of coronary thrombosis.

Charles Wendell Garey, Quincy, Mass.; Boston University School of Medicine, 1889; aged 74; died, Nov. 27, 1940, of acute myocarditis and arteriosclerosis.

Mary Mills, San Angelo, Texas; Southwestern Homeopathic Medical College and Hospital, Louisville, Ky., 1896; aged 80; died, Dec. 23, 1940, of angina pectoris.

James D. Milligan, San Jose, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; aged 62; was found dead in bed, Dec. 5, 1940, of cerebral hemorrhage.

Milton Ashby Nelms, Walla Walla, Wash.; Cooper Medical College, San Francisco, 1893; aged 71; died, Dec. 5, 1940, in a local hospital of acute nephritis.

Alice Crawford Brown, Lancaster, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; aged 68; died, Nov. 23, 1940.

Hillel T. Irving, Chicago; Northwestern University Medical School, Chicago, 1913; aged 52; died, Dec. 12, 1940, in Miami Beach, Fla., of cerebral thrombosis.

George Reaves De Poyster, Fort Worth, Texas; University of Tennessee College of Medicine, Memphis, 1929; aged 40; died, Dec. 24, 1940, of tuberculosis.

George W. Owings, Owings, S. C.; Atlanta (Ga.) College of Physicians and Surgeons, 1900; for many years bank president; aged 63; died, Dec. 7, 1940.

William Whitney Waterman, San Gabriel, Calif.; Columbia University College of Physicians and Surgeons, New York, 1904; aged 66; died, Dec. 10, 1940.

John D. Boileau, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1887; aged 87; died, Dec. 26, 1940, in the Hahnemann Hospital.

Ulysses B. G. Ewing, Franklin, Ind.; Medical College of Ohio, Cincinnati, 1884; aged 77; died, Dec. 17, 1940, of chronic myocarditis and arteriosclerosis.

William John Osborne, Pittsburgh; American College of Medicine and Surgery, Chicago, 1904; aged 63; died, Dec. 26, 1940, of cerebral hemorrhage.

David Reece Bell, Lynwood, Calif.; University of Nebraska College of Medicine, Homeopathic Department, Lincoln, 1885; aged 84; died, Nov. 14, 1940.

Joseph A. Le Doux, Los Angeles; University of Maryland School of Medicine, Baltimore, 1889; aged 84; died, Dec. 23, 1940, of chronic myocarditis.

Lee Seamster, Mineral Wells, Texas (licensed in Texas, under the Act of 1907); aged 88; died, Dec. 11, 1940, in Fort Worth of chronic nephritis.

Thomas Hepburn Buckler, Baltimore; University of Maryland School of Medicine, Baltimore, 1888; aged 73; died, Dec. 27, 1940, of cerebral sclerosis.

Clarence Armor Chritzman, Mercersburg, Pa.; Jefferson Medical College of Philadelphia, 1892; aged 70; died, Dec. 23, 1940, of bronchopneumonia.

Ernest Mason Foreman, Louisville, Ky.; Louisville Medical College, 1897; aged 65; died, Nov. 19, 1940, of cerebral thrombosis and arteriosclerosis.

Augustus M. Nelson, Spartanburg, S. C.; Southern Medical College, Atlanta, Ga., 1895; aged 69; died, Dec. 31, 1940, of fracture of the femur.

John Howard Heath, Oakland, Calif.; Eclectic Medical Institute, Cincinnati, 1874; aged 89; died, Nov. 10, 1940, of cerebral hemorrhage.

Jesse Mitchell Moore ✠ Cleveland; University of Wooster Medical Department, Cleveland, 1898; aged 71; died, Dec. 28, 1940, of pneumonia.

Samuel Lindsay ✠ Winnsboro, S. C.; Bellevue Hospital Medical College, New York, 1898; aged 67; died, Dec. 29, 1940.

William A. Cromley, Columbus, Ohio; Starling Medical College, Columbus, 1888; aged 84; died, Dec. 3, 1940.

Hugh A. Campbell, Crestview, Tenn. (licensed in Tennessee in 1889); aged 90; died, Dec. 30, 1940, of senility.

Samuel H. Bourland, Arkadelphia, Ark. (licensed in Arkansas in 1903); aged 66; died, Dec. 5, 1940.

Ira Finley Harlan, Los Angeles; Barnes Medical College, St. Louis, 1897; aged 69; died, Nov. 8, 1940.

Bureau of Investigation

DROWN LABORATORIES SUBMERGED IN PSEUDO-SCIENCE

In 1923 THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION exposed the essential fakery of the various devices and principles promoted and propounded by Albert Abrams, A.M., M.D., LL.D., F.R.M.S. [sic], of San Francisco. A number of physicians had leased from him a device called the "Oscilloclast," which incidentally was also leased to osteopaths. Continuously since that time various "Wallingfords" have promoted devices of a similar nature, particularly to chiropractors. The American Medical Association has recounted the story of the Abrams business several times in both THE JOURNAL and *Hygeia*. The Bureau of Investigation continues to write about one hundred letters each year to inquiring correspondents concerning these various imitations. Recently THE JOURNAL published a Query and Minor Note on the subject of "radionics," now offered as a basis for the promotion of some of these machines; the particular name devised by Abrams for his supposed magic was "electronics."

From an organization known as the Drown Laboratories of Hollywood, Calif., now come letters which, according to the letterhead, indicate that the concern has other offices and a branch known as the Drown Laboratory of Radio Therapy. These communications announced that a course of instruction would begin Jan. 6, 1941, in what is referred to as the Drown School of Radio Therapy. Some of these letters have been addressed to physicians who have passed them on to the American Medical Association. One of these promotional letters sets forth a tear-fetching appeal to the disconsolate medico:

> *"The people of the general public are fast becoming educated to the fact that there is some way whereby they may have their physical conditions analyzed, diagnosed, and treated from a purely scientific method. They are demanding that method and it behooves every doctor, whatever the school of healing art he has graduated from, to keep up with the times, and supply the need himself and not have to send his patient to some one else and thereby lose that patient's confidence."*

There it is, doctor! Surely you are convinced. But perhaps not? Let us then lay it on a little thicker. The document proceeds:

> *"The Doctor is not always aware of how the patient feels about it, but it leaves the patient thinking 'Well, just where can I turn for this relief?' For this reason and many more you owe it to yourself and patient to learn the Scientific Method of properly analyzing, diagnosing, and treating your case, because if your patient chooses you he wants that secure feeling that his choice can care for him in his time of great need."*

And what is "the Scientific Method"? You want to know! But wait, doctor, a little more stimulation!

> *"The Drown School of Radio Therapy has been opened for the purpose of teaching licensed doctors and physicians the one Known Method at present that will acquaint the doctor with his patient from all angles, and help him keep his patients instead of losing them for lack of equipment, and the complete knowledge to use it."*

You see, doctor, it takes time, it takes instruments—it takes money.

> *"Each course of instruction will last three weeks afternoon and evening. We now have the equipment to give the doctor practical training and he cannot buy our new instruments from us until he passes our examination and shows that he knows enough about the work to handle his cases according to our proven method."*

But be not distressed if you fear that this life-saving boon is to escape you for lack of funds:

> *"In this work as well as any given Therapy the doctor must know what he is attempting to do. It has been definitely proven to us that no doctor can just take these instruments and use them without enough instruction. We therefore have made arrangements to finance the doctor 100% in the following manner."*

The financing is for the full price of the course, which is $200. But "if the doctor passes his examination," this will be applied to the purchase price of an instrument sold by the Drown Laboratories. The doctor is given a choice of paying $17.61 a month in place of $200 cash and, furthermore, of buying the machine without a down payment. The promotors claim, finally: "Your business should never be below $500.00 per month and can run as high as you desire."

The idea that such devices can be promoted and sold eighteen years after similar agencies were declared to be useless is the concern of various governmental authorities, particularly now when our government is so interested in the health of the nation.

The Drown Laboratories are not new to the files of the Bureau of Investigation. The principal seems to be one Ruth B. Drown, who is a Doctor of Chiropractic and who, at various times, has been connected with the promotion of variously named imitations of the old Abrams device. As THE JOURNAL said in 1923: "The American Medical Association will take up Abrams' fantastic vagaries for serious investigation when the American Astronomical Society appoints a committee to determine the truth or falsity of the theory of Voliva, head of the Zionites, that the earth is flat."

AN EGG, AN ORANGE AND A CARROT—ALSO SOME ALFALFA

A "Health Secret" and a Food Fad Subjects of Post Office Action

Who eats an Egg, Orange & Carrott [sic], all raw, per diem, gets the 16 Chemical Elements it takes to keep a Human alive. Thanx. Come again, soon & stay longer, sez, The Eureka Agency.

Such was the "health secret" sent through the mails by Newell R. LaRue to the credulous who answered his advertisement:

WHY DIE? SPEND 24c & LIVE

16 Chemical Elements, which wear out, keep Humans living; replace 'em, by eating 3 items Grocers sell @ 1c each: I'll name 'em and send you 3 gallons of Concentrate that'll harmlessly clean anything and remove any spot from any fabric; also Pen, writes ink if dipped in water; also $ Razor Blade Sharpener, guaranteed to never wear out (makes any Blade last 6 months): everything sent postpaid for 24c by

THE EUREKA AGENCY, NEW ORLEANS, LA.

The Post Office Department didn't think much of the secret or the rest of what Eureka offered and issued a fraud order against LaRue and the agency.

No matter what was written to LaRue—the "secret" quoted was all the medical advice that was sent. One inquirer wrote that he had given up hope of regaining his health; another, that he wished to "live on and on"; and a third, that his physician had abandoned all hope for him.

True, the daily consumption of an egg, an orange and a carrot would provide minute quantities of calcium, phosphorus and iron, but in amounts far below the daily requirement of these elements. The fraud order emphasized that deaths seldom occur as a result of mineral deficiencies and that many diseases may progress to the incurable stage even though the patient has consumed ample quantities of both minerals and vitamins. Evidence also was presented to show that no amount of minerals or "chemical elements" (a term used by LaRue) will prevent or cure such serious conditions as cancer, tuberculosis, diabetes, high blood pressure, hookworm, syphilis, malaria and others, some of which, in spite of diagnosis and medical or surgical treatment, result in fatalities. The warning was added that persons who have diseases which might be cured if diagnosed and given prompt medical or surgical treatment but who, instead, substitute the diet advocated by LaRue would in many instances suffer disastrous consequences.

The Post Office memorandum further brought out that LaRue started his business in 1920 and that he claimed that his so-called diet instructions were given him by a physician many years ago, though he submitted no evidence to support his claim. It was shown that he had no medical training and employed no one who possessed it. He claimed that he lived on the diet that he recommended and it was noted that he appeared emaciated and in poor health. The Eureka Agency was declared to be a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and accordingly a fraud order was issued against it on Dec. 1, 1939.

Alfalfa

Tablets which were said to contain alfalfa, kelp, milk, sugar and powdered sugar and represented to be good for overweight, underweight, influenza, colds, fevers, abscesses, constipation and some other conditions were advertised to the public by Al Morrison of San Francisco under the trade style "Al Morrison Health and Beauty Studio," as follows:

GOOD HEALTH IS EVERYTHING

Al Morrison's Alfalfa-Kelp Tablets are a proven success, they supply eleven organic minerals, alkaline substance and the Vitamins A, B, D and G. Modern Health Science has proven that these important Vitamins, alkaline substance and organic minerals are an important aid in building the human body to better health . . .

Al Morrison's Alfalfa-Kelp Tablets supply the following minerals as they are naturally found in Alfalfa or Kelp: Iodine, Iron, Copper, Manganese, Calcium, Phosphorus, Sulphur, Sodium, Potassium, Magnesium and Chlorine.

The tablets actually contained insignificant amounts of the minerals described and were to be taken "2 tablets three times daily at meal time . . . with a little water, milk or orange juice." They were obviously of no use for the conditions mentioned. The iodine content *was* significant, but the use of these tablets as directed is not the proper manner to treat an actual iodine deficiency.

A second Morrison product was advertised thus:

A MARVELOUS DISCOVERY—ALFALFA-KELP CREAM

ALFALFA-KELP CREAM is made from Cream of Milk, Butter Milk, Lemon Juice, Soya Bean Oil, Alfalfa, Kelp and Acid Benzoic.

ALFALFA-KELP CREAM is an aid in neutralizing an acid condition and quickly relieving muscular aches and pains such as rheumatism, neuritis, arthritis and bone diseases. Just massage well for a minute.

ALFALFA-KELP CREAM is an aid in healing skin diseases, eczema, acne, pimples, psoriasis, blackheads, warts, bunions, sore feet, sprains, sunburn, piles, chapped hands and lips, abscesses and athlete's feet.

ALFALFA-KELP CREAM is a vanishing all purpose Beauty Cream, a tissue builder and an aid in activating the epithelial tissue cells and nature [sic] in restoring weak cells to a normal condition gradually eliminating wrinkles.

Analysis of Alfalfa-Kelp Cream by government chemists revealed that it consisted essentially of water, perfume, 24 per cent of phosphorus pentoxide, 20 per cent of calcium oxide, 13 per cent of anhydrous ferric oxide, 2 per cent of magnesium oxide and a small amount of iodine. Medical experts testified that the disorders which it was represented to cure, such as psoriasis, acne, eczema and abscesses, frequently are due to systemic conditions requiring particularized medicinal treatment, whereas this product would act only as an emollient. They pointed out that it was neither antiseptic nor germicidal and contained no analgesic or sedative, nor did it offer any drug that would act as a fungicide and hence it would not draw abscesses to a head or prove useful in removing the causes of arthritis, neuritis or bone diseases, which, the testimony showed, frequently result from infected tonsils, decayed teeth, venereal diseases, appendicitis and some other conditions.

The employment of this cream also was shown to be useless for wrinkles, which, the testimony brought out, are due to a pathologic change in the tissues, usually coming on with age, and hence neither this nor any other cream would eliminate them.

Because of sufficient evidence that Morrison's business constituted a swindle, it was debarred from the mails by a fraud order issued on Aug. 26, 1940.

Correspondence

THE ST. LOUIS MEDICAL SOCIETY AND THE MOUND CITY MEDICAL FORUM

To the Editor:—In the January 11 issue of THE JOURNAL under the column Bureau of Legal Medicine and Legislation there appears an article concerning Dr. Emerson Stanley Bailey. It states that this man is in good standing in the Medical Society of the City of St. Louis.

I wish to state that Dr. Bailey is not a member of the St. Louis Medical Society. He is probably a member of the Mound City Medical Forum, which is an organization of Negro physicians.

JOSEPH C. PEDEN, M.D., St. Louis.
President, St. Louis Medical Society.

NOTE.—Dr. Peden's letter relates to the medicolegal abstract of a recent decision of the supreme court, special term, Albany County, N. Y., in *Application of Bailey,* 20 N. Y. S. (2d) 915, published in THE JOURNAL, January 11, pages 159-160, in which appeared the following statement:

He [the petitioner] is a member in good standing of the Medical Society of the City of St. Louis, of the State of Missouri Medical Society and of the National Medical Association.

That statement is a condensation of the following language of the court, which appears on pages 917-918 of the published legal report:

From 1917 to the present time, petitioner is and still is a member in good standing of the Medical Society of the City of St. Louis, Missouri, called the St. Louis Medical Forum. From the year 1919 to the present time, petitioner is a member in good standing of the State of Missouri Medical Society, called the Missouri Pan-Medical Association. Since 1910, he has been and still is a member in good standing of the National Medical Association. . . .

According to the files of the American Medical Association, as the president of the St. Louis Medical Society points out, Dr. Emerson Stanley Bailey is not a member of the St. Louis Medical Society. Neither is he a member of the Missouri State Medical Association or of the American Medical Association.

USE OF CORTICAL EXTRACT TO PROMOTE EXCRETION OF BROMIDES

To the Editor:—The observations of Bondurant and Campbell appearing in the January 11 issue of THE JOURNAL, on the use of cortical extract to promote the excretion of bromide in cases of bromide intoxication, and the favorable comment which appears in the discussion of this paper are disconcerting in view of the chemical data presented. In the first place, the rationale which prompted the use of adrenal cortex extract in the treatment of bromism deserves closer scrutiny. It is true that, in adrenal cortical insufficiency, hypochloremia is a common finding and administration of cortical extract aids in returning the electrolyte composition of the blood toward normal. According to present concepts this is accomplished by promoting the renal reabsorption of sodium chloride, a defect in this mechanism existing in Addison's disease. The low blood chloride accompanying high levels of blood bromide, however, merely represents the replacement in the extracellular fluid of one halogen by another for the reason that the kidney makes little or no distinction in the excretion of chloride and bromide. Presumably no renal defect in the reabsorption of chloride exists in bromide intoxication. To postulate that in patients with high levels of blood bromide the administration of adrenal cortex extract would result in a marked preferential excretion of bromide is not only imparting a new ability to the kidney but is also ascribing to the extract the action of promoting the excretion of halide when its known action is to increase reabsorption.

Nevertheless, theoretical considerations must give way to experimental proof if the latter is convincing. Bondurant and Campbell present a number of experimental observations in which

bromides were administered to human subjects and the bromide and chloride content of the blood followed. Their results are presented in table 2. No mention of the chemical methods employed was made. The first column at the start of the experiment represents near basal conditions when little bromide was present in the blood. First glance reveals that the serum chloride levels of these patients varied more than 300 per cent, a fact which belies the physiologic dictum that the kidney zealously guards the electrolyte composition of the blood. Presumably the figures in the table represent milligrams per hundred cubic centimeters expressed either as Cl or as NaCl, no single value being sufficiently characteristic to allow a distinction. If the results are expressed as milligrams per hundred cubic centimeters of Cl, patient 2 has a serum chloride level of 195 milliequivalents; if, on the other hand, the results are expressed as milligrams per hundred cubic centimeters of NaCl patient 3 has a serum chloride level of 34 milliequivalents. Either figure is beyond possibility, the normal level being 100 milliequivalents.

This criticism is raised because the actions of the adrenal cortex extract are by no means innocuous. From what is known of their mechanism of action, they would promote the retention rather than the excretion of bromide. Bondurant and Campbell have raised the provocative question of how adrenal cortex extract would affect the course of chloride and bromide in the renal tubule. Surely more convincing chemical data should be brought to bear on the problem before preparations of adrenal cortex are to be regarded as useful in the treatment of bromide intoxication.

ALFRED GILMAN, PH.D., New Haven, Conn.
Assistant Professor, Laboratory of Pharmacology and Toxicology, Yale University.

SURGICAL TREATMENT OF HYPERTENSION

To the Editor:—In a communication in THE JOURNAL, January 11, de Takats discusses the priority of supradiaphragmatic splanchnic section. He takes issue with the statement (Peet, Woods and Braden, THE JOURNAL, Nov. 30, 1940, p. 1875) that "bilateral supradiaphragmatic splanchnic nerve section and lower dorsal sympathetic ganglionectomy were first introduced into this country by Peet in 1933." The preceding paragraph had clearly explained that this applied only to the surgical treatment of hypertension. As a matter of fact, the operation was first performed in this country by Peet in February 1929 for gastric crises (Peet, M. M.: Splanchnic Section for Hypertension; Preliminary Report, *Univ. Hosp. Bull.*, Ann Arbor **1**:17-18 [June] 1935. Kahn, E. A., and Barney, B. F.: Anterolateral Chordotomy for Intractable Pain of Tabes Dorsalis, *Arch. Neurol. & Psychiat.* **38**:467-472 [Sept.] 1937).

De Takats did not perform the operation until October 1932, when he did it for juvenile diabetes (de Takats, Geza, and Fenn, G. K.: Bilateral Splanchnic Nerve Section in a Juvenile Diabetic, *Ann. Int. Med.* **7**:422-430 [Oct.] 1933).

In his letter de Takats also states that "there is, of course, no question of priority in the matter, as Pieri adequately described and illustrated this approach in 1930." This statement is not entirely correct. Foerster divided the splanchnic nerves above the diaphragm in 1924 for the gastric crisis of tabes (Foerster, O.: Die Leitungsbahnen des Schmertzgefühls und chirurgische Behandlung der Schmertzzustände, 1927, Urban and Schwarzenberg, Berlin; also personal communication to the author), though he did not remove the lower dorsal sympathetic chain.

Pieri described the approach in 1927 (La resezione dei nervi splanchnici, *Ann. ital. di chir.* **6**:678 [July] 1927) but did not perform the operation until July 1929, when he did a unilateral procedure for atony of the stomach. Pieri was the first to perform splanchnic section for hypertension (May 1930), again a unilateral procedure. (Pieri, G.: Tentativi di cura chirurgica dell'ipertensione arteriosa essenziale, *Riforma méd.* **48**:1173 [July 30] 1932).

Reference has been made to the work of Foerster and Pieri by Peet, and though the work of de Takats was not overlooked there did not seem any reason to mention it in an article on the surgical treatment of hypertension.

EDGAR A. KAHN, M.D., Ann Arbor, Mich.

EFFECTS OF ALCOHOL ON DRIVING SKILL

To the Editor:—In view of the interest in our paper (THE JOURNAL, Nov. 9, 1940, p. 1600) dealing with the effect of alcohol, manifested by the communications of Drs. Bogen, Muehlberger, Bavis and Heise (THE JOURNAL, Dec. 21, 1940, p. 2198), it seems desirable to clarify our stand on certain points at issue.

It was not our purpose in the paper, as was implied by Bavis, to investigate the impairment of driving ability at a blood alcohol concentration of 0.15 per cent but rather to demonstrate the degree of variation in the loss of skill in certain tests related to driving in different persons at the same blood alcohol concentration. Muehlberger states that this biologic variation does not exceed 10 to 15 per cent, yet our experiments showed a much greater variation. For example, a loss of 8 per cent in the tests was accompanied by blood alcohol concentrations ranging from 0.55 to 0.145 per cent. This is in accord with the extremes of variation in tolerance reported by Bogen and by Jetter. The criticism that their criteria of drunkenness indicated a more severe intoxication than that which would interfere with motor vehicle operation in no way invalidates their evidence of marked differences in individual tolerance to alcohol.

Bavis states that the learning curve prejudiced the results in our cases. Space restriction did not permit inclusion of control data, which showed a mean increase in performance without alcohol of 0.7 per cent, range from plus 5.2 per cent to minus 3.7 per cent. Nor would the practice effect invalidate the one point we attempted to make, namely the range of individual variation in tolerance.

We quite agree with Bogen that blood alcohol concentration is the best single criterion of intoxication and that concentrations even lower than 0.15 per cent will produce in all persons some degree of impairment of driving skill. Whether this impairment will in all cases be sufficient to justify a conviction for being intoxicated or under the influence of liquor depends on the definition of these terms prevailing in the particular locality. Thus in Arizona "If the ability of the driver of an automobile has been lessened in the slightest degree by the use of intoxicating liquors, then the driver is deemed to be under the influence of intoxicating liquor," while in California being "under the influence" consists in that degree of influence "which causes him to operate his car in a manner different from that in which it would be operated by an ordinarily prudent and cautious person." In the first case, the person is compared with himself before drinking, and there is no doubt that concentrations below 0.15 per cent would invariably produce some lessening of ability. In the second case, the person is compared with "an ordinarily prudent and cautious person," and here the factors of variation in driving skill and tolerance to alcohol play a very important part. In fact, our work shows these variations to be so great as to overshadow the effects of alcohol in the concentrations involved, and it is on this basis that we question the tenability of a fixed limit of 0.15 per cent. That further work, with apparatus more adequate to test judgment, and over a wider range of alcohol concentrations is indicated is self evident. It is to be hoped that when these data are obtained a uniform, comprehensive and just definition of "under the influence" will have been formulated, so that our knowledge may be put to a constructive use.

HENRY NEWMAN, M.D., San Francisco.

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NATIONAL BOARD OF MEDICAL EXAMINERS
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Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, February 22, page 779.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 17-19. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ARKANSAS: * *Medical.* Little Rock, June 5-6. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, June 5-6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), San Francisco, April 16. *Written.* San Francisco, June 30-July 3. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

COLORADO:* Denver, April 1. *Applications must be on file not later than March 15.* Sec., Dr. Harvey M. Snyder, 831 Republic Bldg., Denver.

CONNECTICUT:* *Medical. Written.* Hartford, March 11-12. *Endorsement.* Hartford, March 25. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* Derby, March 11-12. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: July 8-10. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, May 12-13. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA:* Jacksonville, June 23-24. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, April 1. Dir., Bureau of Occupational License, Mr. H. B. Whittlesey, 335 State Capitol Bldg., Boise.

ILLINOIS: Chicago, April 1-3. Superintendent of Registration, Department of Registration and Education, Mr. Lucien A. File, Springfield.

INDIANA: Indianapolis, June 17-19. Sec., Board of Medical Registration and Examination, Dr. J. W. Bowers, Citizens Trust Bldg., Fort Wayne.

KANSAS: Kansas City, June 17-18. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: Louisville, June 5-7. Sec., State Board of Health, Dr. A. T. McCormack, 620 S. Third St., Louisville.

MAINE: Portland, March 11-12. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, June 17-20. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 17-18. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, March 11-13. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN: * Ann Arbor and Detroit, June 11-13. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing.

MINNESOTA:* Minneapolis, April 15-17. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.

MISSISSIPPI: Jackson, June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: *Reciprocity.* Helena, March 31. *Written.* Helena, April 1. Sec., Dr. S. A. Cooney, 216 Power Block, Helena.

NEW HAMPSHIRE: Concord, March 13-14. Sec., Board of Registration in Medicine, Dr. T. P. Burroughs, State House, Concord.

NEW JERSEY: Trenton, June 17-18. Sec., Dr. Earl S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, April 14-15. Sec., Dr. Le Grand Ward, 135 Sena Plaza, Santa Fe.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: Columbus, April 1. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* Oklahoma City, June 11-12. Sec., Dr. James D. Osborn Jr., Frederick.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

SOUTH DAKOTA:* Pierre, July 15-16. Dir., Medical Licensure, Dr. J. F. D. Cook, State Board of Health, Pierre.

TENNESSEE: Memphis, March 26-27. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis.

VIRGINIA: Richmond, June 17-20. Sec., Dr. J. W. Preston, 30½ Franklin Road, Roanoke.

WEST VIRGINIA: Charleston, March 3. Sec., Public Health Council, Dr. Arthur E. McClue, State Capitol, Charleston.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Tucson, March 18. Sec., Mr. Franklin E. Roach, Science Hall, University of Arizona, Tucson.

COLORADO: March 6-7. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

DISTRICT OF COLUMBIA: Washington, April 21-22. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: De Land, June 7. *Applications must be on file not later than May 24.* Sec., Prof. J. F. Conn, John B. Stetson University, De Land.

OKLAHOMA: Oklahoma City, May 22. Sec. of State, Hon. C. C. Childress, State Capitol, Oklahoma City.

OREGON: Corvallis, July 12. Sec., State Board of Higher Education, Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, April 3-4. Sec., Division of Examiners, Rev. Nicholas H. Serror, Providence College, Providence.

SOUTH DAKOTA: June. Sec., Dr. G. M. Evans, Yankton.

WISCONSIN: Madison, April 5. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Avenue, Milwaukee.

Florida November Report

Dr. William M. Rowlett, secretary, State Board of Medical Examiners of Florida, reports the examination held at Tampa, Nov. 18-19, 1940. Fifty-six candidates were examined, 53 of whom passed and 3 failed. The following schools were represented:

PASSED School	Year Grad.	Per Cent
Yale University School of Medicine	(1935)	83.4
Emory University School of Medicine (1939) 84.6, (1940) 76.8, 79.3, 82.8, 84.4	(1938)	78.7,
University of Georgia School of Medicine (1938) 80, (1939) 77.7	(1937)	81.4,
Northwestern University Medical School	(1932)	82.2
Rush Medical College (1903) 76.4, (1927) 83.3, (1932)		79.8
Indiana University School of Medicine (1938) 76, (1939)		81.8
University of Illinois College of Medicine	(1923)	78.8
Louisiana State University Medical Center	(1936)	77.5
Tulane University of Louisiana School of Medicine (1937) 75.3, (1939) 83.7, (1940) 75.3	(1923)	78,
University of Maryland School of Medicine and College of Physicians and Surgeons (1902) 80.5,	(1935)	79.4
Tufts College Medical School	(1940)	83.7
Harvard Medical School	(1937)	89.1
University of Minnesota Medical School (1938) 82.5, (1940) 83.5	(1927)	76.5,
Albany Medical College	(1940)	85.6
Columbia University College of Physicians and Surgeons	(1940)	84.9
Long Island College Hospital	(1913)	78
Long Island College of Medicine	(1936)	85.1
New York Medical College and Hospital for Women	(1917)	78.8
University and Bellevue Hospital Medical College	(1907)	79.5
Univ. of Rochester School of Medicine and Dentistry	(1939)	81.7
Duke University School of Medicine	(1936)	87.8
Ohio State University College of Medicine	(1938)	85.1
University of Cincinnati College of Medicine (1932) 76.7, (1939) 85.7	(1929)	77.7,
University of Oklahoma School of Medicine	(1938)	84.3
Jefferson Medical College of Philadelphia	(1929)	80.8
University of Pennsylvania School of Medicine	(1938)	84.6
Medical College of the State of South Carolina	(1940)	80.7
University of Tennessee College of Medicine (1937) 76.4, (1938) 76.2, (1939) 75.1, 77.2	(1926)	79.2,
Medical College of Virginia	(1931)	75
University of Virginia Department of Medicine	(1929)	79.6
Marquette University School of Medicine	(1938)	83.3

FAILED School	Year Grad.	Number Failed
Rush Medical College	(1933)	1
St. Louis University School of Medicine	(1923)	1
University and Bellevue Hospital Medical College	(1906)	1

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice — Liability of Physician for Blindness Caused by Administration of Tryparsamide.—In October 1923 the plaintiff became unconscious and the defendant physician was called to diagnose and treat him. After many tests and a consultation with other physicians the plaintiff's condition was diagnosed as cerebrospinal syphilis. The plaintiff remained unconscious for nearly a month, during which time the defendant performed thirteen spinal punctures to withdraw spinal fluid so as to prevent convulsions. The published report does not indicate that any tests were made on this fluid. He also administered numerous injections of neoarsphenamine, which was at that time considered an approved treatment for syphilis. When he administered the last dose, in the latter part of November 1923, according to the plaintiff, he told the patient that "he had been cured." During the next fourteen years the plaintiff enjoyed good health. His eyesight was good but in 1930, although the examination of his eyes disclosed no disease, he obtained eyeglasses from an optical company to assist him in reading intricate plans used in his service as a machinist in the navy yard. On an extremely hot day, Aug. 14, 1937, the plaintiff fainted while waiting for a street car. When he regained consciousness he was taken to a hospital, given preliminary treatment and then sent home. The defendant was again called and he found him suffering from a violent headache and incoherence of speech. On August 30 the defendant prepared an "official affidavit" for the navy yard, to enable the plaintiff to get relief payments, and certified that the plaintiff was sick and suffering from hypertension or high blood pressure. Notwithstanding this certification and a nega-

tive Wassermann reaction of the blood, the defendant concluded that the plaintiff had a recurrence of cerebrospinal syphilis and commenced to administer a series of injections of tryparsamide, an approved treatment for that disease. This drug, an arsenic compound, was sold in ampules around each of which was a pamphlet advising, among other things, that treatment be discontinued immediately on the appearance of any ocular disturbance. After or at the time of the third injection the plaintiff complained that the injections were making his eyes a little blurry, but each time he complained the defendant advised him that his difficulty would clear up. It did not, however, and the plaintiff subsequently became almost completely blind, characterized by a "central, or 'gun barrel,' vision" due to permanent optic atrophy. The plaintiff brought suit against the defendant physician for malpractice and obtained a judgment in his favor. The defendant then appealed to the Supreme Court of Appeals of Virginia.

The plaintiff testified that after he complained of having trouble with his eyes the defendant continued the tryparsamide treatments and gave him, in all, nine injections. Dr. Diehl, an eye, ear, nose and throat specialist, corroborated this by testifying that the defendant told him he had given the plaintiff nine injections. The defendant denied that he told the plaintiff in 1923 that he was cured, that he continued the treatments after the plaintiff complained of his eyes and that he told Dr. Diehl that he had administered nine injections. He maintained that he directed the plaintiff to go to Dr. Diehl after he had administered only two injections. The evidence established that in 1923 the plaintiff was suffering from "cerebrospinal syphilis, an incurable disease," and the medical testimony was to the effect that in August 1937 he was still suffering from the disease and that the defendant was justified in treating him for that disease.

The defendant maintained that there were two schools of medical opinion as to whether the use of tryparsamide should be continued after the discovery of optic disturbances. The one theory reasoned that the continued use of the drug by helping the syphilis would help the optical disturbances; the other theory suggested that the drug be discontinued immediately on complaint of visual trouble. The defendant therefore contended that if he followed either one of these theories he had not been negligent. The court held that the defendant's testimony, that he stopped giving the injections after the plaintiff complained about his vision, committed him to the second school of medical opinion. However, since his testimony in that regard was disputed by the plaintiff, it was the opinion of the court that the important question for the jury's determination did not relate to the rule that where there are two schools of thought in medical practice and the physician follows one he cannot be negligent, but did relate to whether or not the defendant properly and carefully followed the branch of medical opinion which he had adopted. On this point, the jury resolved the question against him.

A physician, continued the court, is liable only for a failure to possess and exercise that degree of care and skill ordinarily exercised by prudent practitioners in his community. A physician, however, impliedly represents that he is keeping abreast of the literature and that he has adopted those technics which have become standard in his field of practice. Negligent practice of a physician in the diagnosis and treatment of a patient can be established only by expert testimony. If the evidence leaves it equally probable that a bad result may have been due to a cause for which the physician was not responsible as to a cause for which he was responsible, the patient cannot recover. In the present case, therefore, the plaintiff was required to show that his blindness was caused not by the cerebrospinal syphilis but by the injections of tryparsamide and that those injections were given in contravention of good practice in that community. If it was equally probable that the blindness was caused by either, the plaintiff could not recover. The evidence showed that it is well known in medical circles that either the cerebrospinal syphilis or the injections of tryparsamide could cause serious eye trouble. Two physicians did testify that in their opinion the atrophy of the plaintiff's optic nerves was of syphilitic origin, but they admitted that it was impossible to determine by examination whether such was due to syphilis or to arsenical poisoning. It would appear that no amount of clinical research could determine which of the forces here at work caused the atrophy, and so it was for the jury to weigh the probabilities and decide. The jury did so and found, which finding in the opinion of the court was justified by the evidence, that it was not equally probable that syphilis caused the eye trouble but rather that the defendant's treatment was the proximate cause of the optic atrophy. The evidence showed that for fourteen years after being treated for syphilis the plaintiff had had no eye trouble; that in 1937, despite a negative Wassermann reaction, the defendant treated him for syphilis with tryparsamide, a potent drug which should be administered only under ocular control and which the defendant failed to do; that in spite of the plaintiff's complaints of increasing visual disturbances the defendant continued the injections of the drug and that more than a year later the plaintiff underwent extensive examinations for the presence of syphilis which proved negative, although the blindness remained. Because there was evidence, though conflicting, that at the time the plaintiff fainted on Aug. 14, 1937 he had a headache, an elevation of blood pressure and incoherence of speech, and in view of his age of almost 62 years, the oppressive heat at the time and the negative Wassermann reaction, the court was of the opinion that there was evidence from which the jury might have concluded that there was not sufficient proof of the recurrence of syphilis to justify the defendant in administering tryparsamide in an uncontrolled manner. In fact, there was medical testimony that such treatments, persistently administered despite increasing loss of vision, may be proper only in the case of an extremely aggravated syphilitic condition, and there was evidence in the present case that no such aggravated condition existed. The court, therefore, refused to disturb the jury's verdict and so it affirmed the judgment for the plaintiff.—*Reed v. Church, 8 S. E. (2d) 285 (Va., 1940).*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Mobile, Apr. 15-17. Dr. D. L. Cannon, 519 Dexter Ave., Montgomery, Secretary.

American Association of Anatomists, Chicago, Apr. 9-11. Dr. E. R. Clark, Dept. of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, Secretary.

American Association of Pathologists and Bacteriologists, New York, Apr. 10-11. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American College of Physicians, Boston, Apr. 21-25. Mr. E. R. Loveland, 4200 Pine St., Philadelphia, Executive Secretary.

American Dermatological Association, New Orleans, Apr. 7-11. Dr. Harry R. Foerster, 208 East Wisconsin Ave., Milwaukee, Secretary.

American Physiological Society, Chicago, Apr. 16-19. Dr. Philip Bard, 710 North Washington St., Baltimore, Secretary.

American Society for Experimental Pathology, Chicago, Apr. 15-18. Dr. Harry P. Smith, Dept. of Pathology, University of Iowa, Iowa City, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Chicago, Apr. 15-19. Dr. G. Philip Grabfield, 319 Longwood Ave., Boston, Secretary.

American Society of Biological Chemists, Chicago, Apr. 15-19. Dr. C. G. King, Dept. of Chemistry, University of Pittsburgh, Pittsburgh, Secretary.

Arizona State Medical Association, Phoenix, Apr. 16-19. Dr. W. Warner Watkins, 15 East Monroe St., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, Apr. 14-16. Dr. William R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Federation of American Societies for Experimental Biology, Chicago, Apr. 15-19. Dr. D. R. Hooker, 19 West Chase St., Baltimore, Secretary.

Louisiana State Medical Society, Shreveport, Apr. 21-23. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, Apr. 22-23. Dr. Richard T. Shackelford, 1211 Cathedral St., Baltimore, Secretary.

Northern Tri-State Medical Association, Tiffin, Ohio, Apr. 8. Dr. E. Benjamin Gillette, 320 Michigan St., Toledo, Ohio, Secretary.

South Carolina Medical Association, Greenville, Apr. 15-17. Dr. Julian P. Price, 105 West Cheves St., Florence, Secretary.

Southeastern Surgical Congress, Richmond, Va., March 10-12. Dr. Benjamin T. Beasley, 45 Edgewood Ave., S.E., Atlanta, Ga., Secretary.

Tennessee State Medical Association, Nashville, Apr. 8-10. Dr. H. H. Shoulders, 706 Church St., Nashville, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1930 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

10:189-228 (Dec.) 1940

Drainage and Delayed Operation in Acute Appendicitis. H. Martz, Birmingham, and M. N. Foote, Brooklyn.—p. 189.
Prostatic Obstruction. E. C. Coats, Florence.—p. 195.
Acute Bacillary Dysentery Treated with Sulfapyridine: Report of Cases. S. H. Welch, J. Meyer, Birmingham, and J. S. Smith, Montgomery. —p. 198.
Empyema Thoracis, with Special Reference to Chronic Stage. H. Linder, Birmingham.—p. 205.
Diagnosis of Enterobius Vermicularis Infestation, with Observations on Treatment with Hexylresorcinol by Mouth and in Form of Rectal Jelly. W. H. Y. Smith and S. R. Damon, Montgomery.—p. 209.
Complications Following Thyroidectomy. J. D. Wilson, Birmingham. —p. 211.

American J. Obstetrics and Gynecology, St. Louis

40:925-1106 (Dec.) 1940. **Partial Index**

Hormone Studies in Artificial Menopause Produced by Roentgen Rays. I. T. Nathanson, Charlotte Rice and J. V. Meigs, Boston.—p. 936.
*Recognition and Treatment of Fetal Heart Arrhythmias Due to Anoxia. C. J. Lund, Madison, Wis.—p. 946.
Further Studies on Hormone Excretion During Menstrual Cycle. F. E. D'Amour, Denver.—p. 958.
*Evaluation of Effect of Antenatal Antisyphilitic Therapy on Fetal Mortality and on Congenital Syphilis. L. V. Dill, H. J. Stander and C. E. Isenhour, New York.—p. 965.
Psychiatric Contraindications in Use of Estrogens During Menopause. W. L. Heaver, White Plains, N. Y.—p. 980.
*Roentgen Visualization of Placenta by Soft Tissue Technic: Report of Two Years' Experience. A. L. Dippel and W. H. Brown, Baltimore. —p. 986.
Chronic Nephritis and Pregnancy Fatalities in Philadelphia. N. F. Paxson, Philadelphia.—p. 995.
Effect of Estrogens on True Preeclampsia and Eclampsia. E. Shute, London, Ont., Canada; brief note by M. M. O. Barrie, London, England.—p. 1003.
Results in Treatment of 600 Incomplete Abortions. H. P. Mencken and H. H. Lansman, Flushing, N. Y.—p. 1011.
Lead Mobilization Accompanying Toxemia of Pregnancy. T. V. Letonoff, J. G. Reinhold, Helena E. Riggs and C. Cohn, Philadelphia.—p. 1017.
Operation for Uterine Retrodisplacement and Prolapse by Reduction and Attachment of Round Ligaments. K. P. A. Taylor, Puerto Armuelles, Panama.—p. 1026.
Nausea and Vomiting of Pregnancy Due to Allergic Reaction: Study of 192 Cases. J. W. Finch, Hobart, Okla.—p. 1029.
Effects of Stilbestrol on Lactation. A. R. Abarbanel and M. J. Goodfriend, New York.—p. 1037.
Cobra Venom for Intractable Pain. J. W. Kelso, Oklahoma City.—p. 1050.

Fetal Heart Arrhythmias Due to Anoxia.—Lund points out that, since the rate and rhythm of the fetal heart are the best criteria available for studying the condition of the fetus during pregnancy and labor, frequent determination and consequent treatment may forestall respiratory depression due to anoxia. Fetal anoxia, infrequently recognized and rarely treated antenatally, can quickly produce grave fetal complications. The slowing of the fetal heart rate has long been considered a sign of developing fetal asphyxia. Waters and Harris emphasized the fact that anoxia of the fetus can be recognized by change in the fetal heart rate and successfully treated by oxygen administration to the mother forestalling respiratory anoxemic depression. The author cites 8 cases which demonstrate slowing in fetal heart rate due to anoxia and the response to oxygen. Now since auscultatory and recording devices have been perfected objective evidence of these arrhythmias can be presented. The response to oxygen therapy should occur within ten minutes and frequently is apparent in less than five minutes. If after fifteen minutes no improvement is noticed it may be assumed that oxygen will be of no value. Failure of the fetus to receive oxygen, when it is assumed that the maternal blood stream is well saturated with it, may be due to disturbances of placental circulation, cord entanglement and prolapse. These constitute the most frequent causes of intrauterine asphyxia. The time required to prepare a patient for immediate operative delivery under such circumstances is usually more than ten minutes and can be done while oxygen is being given; thus no hazard is created for the infant. Frequently the improvement in the fetal heart rate will obviate the necessity of exigent operative delivery and its danger to the mother and the infant. Early recognition of fetal anoxia and its treatment by maternal oxygen therapy will prevent many cases of asphyxia neonatorum.

Effect of Antepartum Antisyphilitic Therapy on Fetal Mortality.—Dill and his associates studied the records of 386 patients (453 pregnancies) treated for syphilis at the New York Lying-In Hospital during the last seven years. They tried to determine which patients may expect a satisfactory outcome of the pregnancy and attempted to find whether the type and the amount of antisyphilitic therapy appreciably affected the fetal mortality and the incidence of infection. All of the patients treated had histories of syphilitic infection and had been treated previously for the disease, and serologic studies and family investigation failed to leave any reasonable doubt that the patient did not have syphilis. Each patient had been given more than one treatment for the suspected syphilis. More than 85 per cent of the pregnancies of these syphilitic patients terminated in living term babies, a percentage which is significantly lower than that among a nonsyphilitic control group of patients. Deadbirths and neonatal deaths accounted for the greatest loss of life; this loss exceeded control figures by more than 100 per cent. The number of premature living babies and premature neonatal deaths is also distinctly increased over control levels. With pediatric follow-up of more than six months the authors were able to find only 9 pregnancies resulting in babies which could definitely be called syphilitic, all of which were subjected to treatment. Two other babies who were subjected to treatment before the end of the first month of life had an immediate reversal of serologic findings. The percentage of syphilitic babies was higher when the maternal blood Wassermann was positive, but a significant difference was found in the number of fetal casualties. There were 4 infants in whom the blood Wassermann reaction failed to become negative even after two or three months and in 1 it remained positive for six months. These children have shown no clinical evidence of syphilis and with no treatment have remained clinically and serologically free from the disease for more than four years. Of the syphilitic babies, 20 per cent had osseous changes compatible with congenital syphilis, but among 80 per cent there were no roentgenologic changes. None of the placentas of syphilitic infants showed microscopic evidence of syphilis. Except in relation to the number of syphilitic babies and fetal deaths occurring in the different treatment groups the authors believe it is impossible to determine the effects of treatment. A steadily progressive diminution of syphilitic babies was observed with the increased amount of therapy that the mother received ante partum and only 1 fetus was found to be syphilitic; the mother had received more than 6 Gm. of an arsenical preparation. No correlation of the total amount of bismuth therapy to the evidence of syphilitic infection of the fetus was noted. Deadborn babies and neonatal fetal deaths apparently did not vary directly with the amount of either type of treatment. On the contrary, with advancing dosages of both arsenic and bismuth a steady fall in the number of fetal casualties was found until, with good therapeutic doses of arsenic a number not exceeding the control level was obtained. No syphilitic babies were obtained in the group receiving treatment both prior to and during pregnancy, even though the treatment was minimal in both instances. The incidence of syphilitic babies decreased significantly as the length of treatment increased. It seemed that the longer the age of the infection the lower was the incidence of syphilitic infants. Dystocia, pyelitis and antepartum bleeding were not observed to have an increased frequency among syphilitic mothers with or without previous treatment. However, the incidence of toxemia of pregnancy was increased although the increase could not be correlated with the amount of treatment, the time it was begun or the amounts of arsenic or bismuth

preparations received. The conclusion is that syphilis need no longer constitute a major cause of fetal mortality or a frequent disease of the newborn, as early antepartum therapy, greatly enhanced by treatment received prior to conception, promises a favorable outcome.

Roentgen Visualization of Placenta.—Dippel and Brown analyze the clinical value of the roentgenologic visualization of the placenta after using it in 262 examinations. They clearly saw the placenta in 236, or 90 per cent, of the observations. Hydramnios accounted for nonvisualization in 5.73 per cent of the soft tissue roentgenograms, unsatisfactory roentgenograms accounted for 3.05 per cent of the failures, and it was impossible to see the placenta in 2 of 8 cases of twin pregnancy. Immaturity, provided the pregnancy has advanced beyond the midpoint, and abnormal presentations and positions are not hindering factors. Placental calcification is rarely extensive enough to aid in its localization. The fetal position is not a reliable criterion of the site of the placenta. Placental implantations were almost equally divided. However, with low implantation, essentially eight times as many placentas were implanted on the anterior as on the posterior wall. The average thickness of the walls of the fundus uteri near term measured 1.24 cm. on roentgenograms made at a distance of 42 inches. Only 11 of 92 cases of vaginal bleeding were found roentgenographically and clinically to have true placenta praevia; 15 other cases presented roentgen evidence of low implantation without the usual clinical signs. Soft tissue roentgenography in cases of vaginal bleeding is of greatest value when the whole placenta is visualized above the iliac crests. These constitute 88 per cent of the instances of vaginal bleeding in the later months of pregnancy.

American Journal of Ophthalmology, St. Louis

23:1311-1428 (Dec.) 1940

Comparative Study of Effects of Mecholyl, Doryl, Eserine, Pilocarpine, Atropine and Epinephrine on Blood Aqueous Barrier. K. C. Swan and W. M. Hart, Iowa City.—p. 1311.

Mucopolysaccharide Acid of Cornea and Its Enzymatic Hydrolysis. K. Meyer and Eleanor Chaffee, New York.—p. 1320.

Dark Adaptation and Dietary Deficiency in Vitamin A. L. F. Steffens, H. L. Bair and C. Sheard, Rochester, Minn.—p. 1325.

Glass Membranes in Eye: Part II. Lamina Vitrea Chorioideae. A. Loewenstein, Glasgow, Scotland.—p. 1340.

Standards for Outpatient Ophthalmologic Departments: II. Standards for Nursing Service: III. Standards for Medical Social Service. C. Berens, Ruth C. Williams and Eleanor Brown Merrill, New York.—p. 1352.

Evolution of Lens Lesions in Eye Perforations and Ruptures: Medicolegal Study. M. Davidson, New York.—p. 1358.

Pharmacologic Behavior of Intraocular Muscles: II. Sensitization Phenomena in Dilator and Sphincter Iridis. E. Sachs and P. Heath, Detroit.—p. 1376.

Canadian Medical Association Journal, Montreal

43:509-622 (Dec.) 1940. **Partial Index**

Diagnosis and Treatment of Hyperthyroidism. J. H. Means, Boston.—p. 509.

Diets in Dyspepsia. J. Daly, Toronto.—p. 513.

Value of Elimination Diets in Treatment of Infantile Eczema. A. R. Birt, Winnipeg, Man.—p. 520.

Surgery of the Aged. A. W. S. Hay, Winnipeg, Man.—p. 531.

Treatment of Painful Feet. C. C. Ross, London, Ont.—p. 537.

Trends in Military Surgery in First Year of War. J. A. MacFarlane, Toronto.—p. 540.

*Nail Polish Dermatitis. J. F. Burgess, Montreal.—p. 544.

Critique of Surgical Treatments for Deafness. E. P. Fowler Jr., New York.—p. 546.

Termination of Pregnancy Before Period of Viability by Abdominal Hysterotomy Through Lower Uterine Segment. H. W. Johnston, Toronto.—p. 552.

Treatment of Tumors of Salivary Glands by Radical Excision. R. M. Janes, Toronto.—p. 554.

Recent Advances in Tuberculosis. E. Mayer, New York.—p. 565.

Psychoses Associated with Pregnancy and Puerperium. W. H. Cruickshank, Toronto.—p. 571.

Carcinoma of Breast: Some Observations on Preoperative X-Radiation. B. R. Mooney, Winnipeg, Man.—p. 580.

Amebic Dysentery and Ulcerative Colitis: Report of Seven Cases. Pauline Beregoff-Gillow, Montreal.—p. 588.

Survey of Intestinal Protozoa in a Private Practice in Montreal. Pauline Beregoff-Gillow, Montreal.—p. 592.

Nail Polish Dermatitis.—Burgess reports 10 cases with a history of repeated violent or mild exacerbations every few days of a patchy eruption of the face and neck. The eruption was not uniformly symmetrical but was frequently unilateral. The areas affected were usually about one or both eyes, about the mouth, the sides of the neck and the supraclavicular regions. In 1 case pruritus ani was due to repeated contact with nail polish, in 2 the eruption was on the shoulders and in 2 in the midsternal areas. Obviously repeated contact with the fingers in these areas precipitated the dermatitis and, once the eruption occurred, the incessant burning and irritation greatly increased the contact. Freshly applied nail polish appeared more highly irritant than when it had been on the nails for some days. Eczema involving the fingers was encountered only once. The patch test in the reported cases was uniformly positive. In order to ascertain its value, 25 random cases were tested to different nail polishes and each gave a negative patch test. A number of other cases with similar eruptions gave negative reactions, but the eruption disappeared on discontinuance of nail polish. It is probable that a negative patch test on some other area of the body does not necessarily exclude the possibility of nail polish as a causative agent, and in the absence of other etiologic factors contact with nail polish appears indicated.

Georgia Medical Association Journal, Atlanta

29:561-608 (Dec.) 1940

Treatment of Pneumonia in Adults with Sulfapyridine. J. F. Hanson, Macon.—p. 561.

Journal of Experimental Medicine, New York

72:623-790 (Dec.) 1940. **Partial Index**

Comparative Susceptibility of Fetal and Postnatal Guinea Pigs to Virus of Epidemic Influenza. H. A. Dettwiler, N. P. Hudson and O. C. Woolpert, Columbus, Ohio.—p. 623.

Quantitative Aspects of Homologous and Heterologous Active Immunity to Strains of Virus of Epidemic Influenza. M. D. Eaton and H. E. Pearson, Berkeley, Calif.—p. 635.

Isolation of Blood Group Specific B Substance. E. Witebsky and N. C. Klendshoj, Buffalo.—p. 663.

Studies on Mechanism of Vomiting Produced by Staphylococcus Enterotoxin. M. Bayliss, Baltimore.—p. 669.

Studies of Transmissible Agent of Rous Chicken Sarcoma I: Precipitation with Basic Proteins. D. Shemin, E. E. Sproul and J. W. Jobling, New York.—p. 697.

Behavior of Renal Blood Flow After Partial Constriction of Renal Artery. H. A. Schroeder and J. M. Steele, New York.—p. 707.

Study of Neurotropic Tendency in Strains of Virus of Epidemic Influenza. T. Francis Jr. and Alice E. Moore, New York.—p. 717.

Antigenic Potency of Epidemic Influenza Virus Following Inactivation by Ultraviolet Radiation. J. E. Salk, G. I. Lavin and T. Francis Jr., New York.—p. 729.

Etiology of Hypertension Due to Complete Renal Ischemia. M. Prinzmetal, H. A. Lewis and S. D. Leo, Los Angeles.—p. 763.

Journal-Lancet, Minneapolis

60:523-560 (Dec.) 1940

Routine Ocular Muscle Investigation. W. H. Fink, Minneapolis.—p. 523.

Selenium Poisoning in the Human: Preliminary Case Report. R. E. Lemley, Rapid City, S. D.—p. 528.

*Pruritus Vulvae as Possible Early Symptom of Unrecognized Diabetes. L. H. Winer and E. A. Strakosch, Minneapolis.—p. 532.

New Type of Obstetric Forceps. F. A. LaBreck, Eau Claire, Wis.—p. 534.

A New University Health Service Building. W. E. Forsythe, Ann Arbor, Mich.—p. 536.

Are Track Stars Barrel Chested? S. A. Weisman, Minneapolis.—p. 539.

Contribution of Physical and Health Education Teacher to the Guidance Program. Ruth Strang, New York.—p. 542.

Vulval Pruritus in Unrecognized Diabetes.—Winer and Strakosch suggest that diabetes is more often the underlying cause of pruritus vulvae than is generally suspected. Itching of the vulva is often the first symptom of diabetes or rather of hyperglycemia. Many patients who do not have sugar in the urine give a history on questioning suggestive of diabetes, and the blood sugar content may be found to be elevated. A study of 31 patients admitted to the Minneapolis General Hospital Clinic between January 1939 and August 1940 complaining of vulval pruritus revealed that 26 had diabetes. Eleven of the 26 were known to have the disease and the remaining 15 were found after investigation to have it. The histories of these 15 patients showed that they were each seen by from two to five physicians. The ages of the patients ranged between 30 and 50 years. All were married, but parous and nulliparous women were equally divided. They all gave histories of polyphagia, polydipsia and polyuria. The duration of itching varied from three to fourteen months before the diagnosis of diabetes had been made. Several

of these women were under psychiatric treatment without avail and were being considered for institutional care. One patient had been scheduled for a vulvectomy, which was subsequently unnecessary. The urines of the patients were negative for sugar on two or more occasions, and the urine was free of sugar at the time of admission to the hospital. Fungi were found in 8 of 10 patients thus examined, but in these local therapy alone did not give relief. One patient with fungi was resistant to treatment until her husband was similarly treated. The fasting blood sugar content of all the patients was either at the upper limit or above normal, one being 235 mg. per hundred cubic centimeters of blood. The sugar tolerance test in all showed a decided tendency of the blood sugar to remain elevated far above normal from three to six hours after the ingestion of dextrose. All the patients responded to treatment only after their diet was regulated and the blood sugar reduced to normal. In addition to the low carbohydrate diet 2 patients required insulin. Diagnosis of diabetes mellitus requires more than a positive finding of sugar in the urine. In addition to a blood sugar determination, the sugar tolerance test was useful in verifying the diagnosis.

Journal of Thoracic Surgery, St. Louis

10:131-250 (Dec.) 1940

Experimental Study of Fate of Remaining Lung Following Total Pneumonectomy. J. J. Longacre and R. Johansmann, Cincinnati.—p. 131.
Studies in Experimental Production of Pulmonary Emphysema. J. R. Paine, Minneapolis.—p. 150.
Position of Patient in Performance of Thoracoplasty and Certain Other Operations: Note. H. C. Trumble, Melbourne, Australia.—p. 176.
*Role of Bronchoscopy in Treatment of Pulmonary Abscess. C. L. Jackson and A. R. Judd, Philadelphia.—p. 179.
Some Controversial Matters of Anesthesia for Thoracic Surgery. H. K. Beecher, Boston.—p. 202.
*Operative Treatment of Cardiospasm. H. K. Gray and I. C. Skinner, Rochester, Minn.—p. 220.

Bronchoscopy in Pulmonary Abscess.—Jackson and Judd believe that there is a definite place for bronchoscopy in the treatment of pulmonary abscess other than its diagnostic value. In selecting patients for bronchoscopy they chose those with a single abscess cavity determined by thorough roentgen examination, and those who although showing multiple or multilocular cavities present satisfactory evidence that the original lesion was singly cavernous. Of the 124 cases analyzed the cavities seemed to show a predilection for the right side (93 as compared to 31 in the left lung) and for the lobar apex when occurring in the lower lobe of the right lung. There was no definite relationship between the location of the cavity and the ability of the patient to survive. The conservative regimen (rest, supportive care, transfusions, vaccines, intravenous chemotherapy, postural drainage and bronchoscopic aspiration) alone was carried out in 87 cases, although 9 were under observation for so short a time that they cannot be included. There were 23 deaths among the remaining 78 patients, 33 were known to be cured, 5 were discharged cured but without follow-up within the last year and 17 were improved at the time of discharge to their referring physicians. Thirty-seven patients were referred for some form of surgical care, and of these 18 have died of various causes and of the 19 surviving patients only 4 have survived procedures other than external drainage. The poor results obtained by procedures other than external drainage coincide with the experience of other investigators and justify their abandonment except when complicating conditions demand lobectomy or pneumonectomy. The authors agree that surgical intervention should be early if progress is not rapid and unmistakable but that every patient should first be given the advantage of a rigid conservative regimen for at least a brief period. The time limit varies for each patient, and the optimal time for the various therapeutic procedures can be set best by the cooperation of the internist, thoracic surgeon, roentgenologist and bronchologist at some sort of "chest conference."

Operative Treatment of Cardiospasm.—Gray and Skinner discuss the etiology of cardiospasm, the pathologic changes, symptoms and treatment. Among the more than 1,200 cases encountered at the Mayo Clinic only 7 required surgical intervention. The authors submit reports of the cases in which operation was performed. The operations were four manual dilations of the cardia according to Mikulicz, one esophagogastrostomy, one thoracocervical sympathectomy and one abdominal sympathectomy combined with manual dilation of the cardia. In the authors' opinion surgical procedures will at times be necessary for those few patients whose esophagus is obviously dilated, tortuous and lengthened, with angulation at the cardia and development of a reservoir below the level of its opening. Dilation of the cardia from above by some mechanical dilator is an extremely satisfactory method of conservative treatment in most cases of cardiospasm. Of 810 cases observed at the clinic up to 1933, 805 were treated conservatively, and complete relief was obtained in 71 per cent of 670 traced patients. A large proportion of the remainder were benefited; only 32 received no help. Nine died as a result of splitting of the esophagus. All but 1 of these deaths occurred prior to 1925, when a change in technic was instituted.

Kentucky Medical Journal, Bowling Green

38:565-610 (Dec.) 1940

Fibrosarcoma of Ileum: Report of Case. H. Mahaffey, Louisville.—p. 567.
Pheochromocytoma of Adrenal with Paroxysmal Hypertension: Case Relieved by Surgery. J. E. Hamilton, Louisville.—p. 572.
Medical Horizons. N. B. Van Etten, New York.—p. 575.
Vitamins, Their Use in Children. T. J. Marshall, Paducah.—p. 579.
Some Practical Thoughts About the Ear. C. L. Woodbridge, Middlesboro.—p. 582.
Some Behavior Problems in Infancy and Early Childhood. W. F. Lamb, Russellville.—p. 584.
Surgical Considerations of Gallbladder and Bile Ducts: Factors Influencing Mortality and Morbidity. A. W. Allen, Boston.—p. 588.
Applied Pathology of Paranasal Sinuses. W. A. Weldon, Glasgow.—p. 594.
Diagnosis of Acute Surgical Conditions of Abdomen in Children. E. W. Northcutt, Covington.—p. 597.
Squint, Its Etiology and Treatment. W. Snyder, Frankfort.—p. 598.
Treatment of Pneumonia. J. M. Kinsman, Louisville.—p. 600.

Military Surgeon, Washington, D. C.

87:497-590 (Dec.) 1940. **Partial Index**

Our Medical Preparedness for Modern War. C. R. Reynolds.—p. 499.
Results in 152 Denervations of Adrenal Glands in Treatment of Neurocirculatory Asthenia. G. Crile.—p. 509.
Differential Diagnosis of Neurocirculatory Asthenia (Soldier's Heart). E. P. McCullagh.—p. 511.
New Devices for Reduction of Maxillary Fractures. C. M. Woodward.—p. 525.
Peculiarities of Certain Common Diseases in Panama. J. R. Darnall.—p. 531.
Applicability of Electroencephalogram (EEG) to Military Medical Problems. H. M. Serota.—p. 537.
A Substitute Darkfield. H. H. Parsons.—p. 540.
Dr. William Douglass: Survey of Medical Conditions (1752). J. M. Phalen.—p. 541.

Minnesota Medicine, St. Paul

23:825-898 (Dec.) 1940

Indications for Excretory Urography. B. H. Nichols, Cleveland.—p. 825.
*Endocrine Disturbances in Relation to Skin Diseases. F. W. Lynch, St. Paul.—p. 829.
Maternal Mortality and Forceps Deliveries. F. A. La Breck, Eau Claire, Wis.—p. 834.
Care of Patients Preceding Gastric Operations. N. H. Baker, Fergus Falls.—p. 839.
Preoperative Preparation of the Diabetic Patient. A. H. Beard, Minneapolis.—p. 841.
Preoperative Care in Surgery of Biliary Tract. E. M. Jones, St. Paul.—p. 844.
Diagnosis of Tumors of Breast. E. T. Bell, Minneapolis.—p. 847.
Treatment of Carcinoma of Breast. M. W. Alberts, St. Paul.—p. 848.
Primary Carcinoma of Bronchus. H. J. Moersch, Rochester, Minn.—p. 853.
Fracture of Elbow. M. H. Tibbetts, Duluth.—p. 856.

Endocrine Disturbances and Cutaneous Diseases.—Lynch points out that endocrine disturbances exert a powerful influence on the skin and that cutaneous changes afford considerable diagnostic aid in endocrinopathies. Analysis of the classic endocrine disturbances (hypothyroidism, hyperthyroidism, hypofunction of the adrenal cortex, hypopituitarism, hyperpituitarism and disturbed gonadal functions) shows that most of the cutaneous anatomic structures and functions are directly influenced by endocrine associations. That the character, growth and distribution of hair are more influenced by the endocrines than by any other factor may also be deduced by analysis of the

classic endocrinopathies. The texture of hair is controlled mostly by thyroid function, growth is chiefly subject to the pituitary gland, and its distribution is a result of gonadal activity. Recent work on pancreatic hormones suggests that cutaneous lipoidoses and perhaps psoriasis may be related to the endocrines. The association between allergy and endocrinopathy has possibilities that have not been explored. That some interrelationship is present cannot be doubted; hyperthyroidism is known to exaggerate allergic symptoms, and estrogenic activity apparently decreases allergic tendencies. There are many signs of endocrine activity in neurodermatoses; the lowered blood pressure, vascular dilatation or constriction and emotional changes are most significant. A lowered metabolic rate is further evidence of such association. Since hormones act on all tissues, endocrine influence on cutaneous diseases might be expected. Syphilis is one disease which is without doubt influenced by the endocrines. The difference in the course of syphilis in the sexes and the favorable influence of pregnancy are well established clinical observations. In contrast to the endocrine influence on systemic disease, an extensive systemic disease may influence the glands of internal secretion. Generalized exfoliative dermatitis exerts a general systemic influence, and in association with this disturbance a number of endocrine abnormalities have been demonstrated. These abnormalities might be the cause of the cutaneous involvement, but it appears more likely that they are the result of the extensive disturbance of cutaneous functions. Among the dermatoses influenced by endocrine activity are necrobiosis lipoidica diabeticorum, acanthosis nigricans, hemochromatosis, hypertrichosis (and baldness a hereditary trait associated with some type of mild endocrine dystrophy), menstrual dermatoses, cutaneous changes at the menopause, hyperpigmentation (linea nigra), striae and chloasma of pregnancy, scleroderma, calcinosis, impetigo herpetiformis, livedo, acrocyanosis, erythema induratum and various forms of pernio. There is some evidence that acrodynia is closely associated with adrenal cortical disturbance. The dermatologist needs little knowledge of endocrine therapy of the cutaneous disturbances associated with classic endocrinopathies, as his assistance should be chiefly diagnostic. Such therapy should be left to the endocrinologists at least until the indications, dosage and technic are developed, when it can be applied by all practitioners, as is now true with antisyphilitic agents.

Missouri State Medical Assn. Journal, St. Louis

38:1-36 (Jan.) 1941

The Fibroid Uterus. E. D. Plass, Iowa City.—p. 1.
Diabetes: Advances in Treatment. C. M. MacBryde, St. Louis.—p. 3.
Treatment of Anxiety States. J. M. Sartin, Springfield.—p. 7.
Application of Gynecologic Endocrinology to General Practice. P. F. Fletcher, St. Louis.—p. 10.
Pseudotumors of Orbit (Inflammatory). A. N. Lemoine, Kansas City.—p. 15.
Type XXXIII Pneumococcus Pneumonia: Report of Five Cases. L. L. Terry, L. D. Thompson and J. C. Edwards, St. Louis.—p. 17.
Carcinoma of Sigmoid and Advantages of Devine Colostomy. G. W. Hogeboom, Springfield.—p. 20.
Relationship of Arterial Hypertension to Surgical Risk in Breast Cancer: Analysis of 446 Consecutive Radical Mastectomies. H. R. Senturia, St. Louis.—p. 22.

Nebraska State Medical Journal, Lincoln

25:429-460 (Dec.) 1940

Present Day Concepts in Handling Gallbladder Disease. W. H. Cole, Chicago.—p. 429.
*Present Status of Electroencephalography and Some of Its Practical Applications. A. E. Bennett and P. T. Cash, Omaha.—p. 435.
Study of Small Bowel, with Special Reference to Avitaminosis. A. F. Tyler, Omaha.—p. 441.
Bilateral Retinoblastoma (Glioma): Preliminary Report of Case. W. H. Morrison, Omaha.—p. 445.

Electroencephalography.—Bennett and Cash point out that the electroencephalogram is capable of locating the site of a cortical lesion in from 80 to 90 per cent of cases. Subcortical tumors cannot be located directly, but they often can be inferred because of the electrical dysfunction produced in the cortex as in pituitary tumors, which usually produce abnormal signs in the frontal lobes. In cerebellar tumors the location may be inferred, but with difficulty. In a few instances with organic pathologic changes the electroencephalogram may be normal. Gliomas of the parietal lobes produce a decreased alpha frequency and slow pathologic or delta waves. Tumors of the frontal lobes do not usually affect the alpha rhythm. Neoplasms in themselves are electrically inactive, but by their effect on the cortex they produce changes demonstrable electrically. Cerebral abscesses may be localized in the same manner as neoplasms. If localization is obscured by generalized increased intracranial pressure, this may be overcome by using hypertonic solutions, which are more effective than the release of pressure by ventricular tap. Less consistent but still definite changes in the normal rhythm, with the presence of abnormal waves, may be noticed in the presence of toxic encephalitis, epidemic encephalitis, paralysis agitans, presenile and senile dementia, multiple sclerosis and dementia paralytica. The electroencephalogram is extremely useful in localizing epileptogenic foci in patients showing no other localizing phenomena. This is particularly significant in view of the recent advances in the surgical treatment of epilepsy. Of practical significance is the comparative study during symptom free periods in order to evaluate the efficiency of treatment, thus guiding the clinician. The hereditary factor in epilepsy has received further confirmation by the electroencephalogram. In functional disorders (neuroses, behavior problem children, schizophrenia and manic-depressive insanity), the electroencephalogram has opened a new approach for etiologic and pathophysiologic study.

New England Journal of Medicine, Boston

223:959-1000 (Dec. 12) 1940

*Relation of Pyelonephritis and Other Urinary Tract Infections to Arterial Hypertension. S. Weiss and F. Parker Jr., Boston.—p. 959.
*Open Air Sanatorium Care for Patients with Rheumatic Fever and Rheumatic Heart Disease: Preliminary Report. J. P. Hubbard and W. A. Griffin, Boston.—p. 968.
Treatment of Peptic Ulcer with Aluminum Hydroxide: Two Year Study. S. A. Wilkinson and P. D. Comanduras, Boston.—p. 972.
Reaction of Leukemic Patients to Sulfapyridine Administration: Preliminary Report. K. E. Livingston and Ruth D. Moore, Boston.—p. 975.
Use of Oxygen in Demonstrating Posterior Herniation of Intervertebral Disks. J. L. Poppen, Boston.—p. 978.
First Aid Treatment for Asphyxia. C. C. Lund, Boston.—p. 982.

Relation of Urinary Infections to Arterial Hypertension.—Weiss and Parker classify pyelonephritis into four groups: acute (pyelitis), chronic (active), healed and healed with recurrence. The main morphologic characteristics of each group are described. Two illustrative cases of the natural history of pyelonephritis and the relation of infections of the urinary tract to the development of arterial hypertension are discussed. The renal infection of the first patient began at the age of 6 months and persisted until her death at 15 years of age. Whereas local symptoms with pyuria dominated the clinical picture in early childhood, nephritis with arterial hypertension was the presenting syndrome during the last two years. The cause of death was uremia, at which time the renal infection still persisted. The case represents chronic (active) pyelonephritis. The kidneys at postmortem examination were unusually small but without congenital abnormalities. The authors believe that this type of kidney is caused by lack of normal growth due to chronic infection rather than to renal contraction. The late effects of pyelonephritis in adult life are presented by the second patient whose first attack developed during pregnancy. The left kidney, removed surgically, was small and probably congenitally hypoplastic. Whether the right kidney has any congenital malformation is not certain. During the twenty years this patient has been under study she has suffered from repeated attacks of acute infection, suggesting healed and recurrent pyelonephritis. The gradual onset of hypertension was clearly demonstrated. For the first seventeen years, symptoms referable to the urinary system and pyuria were the main features; the blood pressure was normal. Symptoms of severe hypertension with changes in the eyegrounds and angina pectoris developed during the last three years. Renal tuberculosis, infections of the renal pelvis, hydronephrosis and cystitis are usually not responsible for arterial hypertension. In children with low renal reserves of long standing caused by pyelonephritis disturbances of bone formation with deformities (renal rickets) may be present, but the characteristic changes differ from those of true rickets. Acute pyelonephritis (pyelitis) by itself is usually not responsible for toxemia of pregnancy. It has an indirect relation to toxemia and eclampsia so far as it predisposes to arterial hypertension and to a low renal reserve. Diffuse pyelonephritis in its chronic or healed stage should be considered as one form of nephritis. The clinical course of pyelonephritis varies. In most cases the

disease is benign and self limiting, but at times it becomes chronic, leading to arterial hypertension and to renal or cardiac insufficiency.

Sanatorium Care for Patients with Rheumatic Fever.—Hubbard and Griffin present the results of two years of open air treatment of rheumatic fever and heart disease. The idea began as an experiment in an attempt to determine whether a rheumatic child in a carefully controlled, open air environment can be kept free of respiratory infections and whether the infection itself responds favorably to such an environment. During the winter of 1938-1939, 20 children who had recently recovered from active rheumatic fever were sent to the sanatorium. Some had respiratory infections at the time of admission. They remained as a closed colony during the winter and spring months. Only the child's parents were allowed to visit once a week. The parents were required to wear masks, and no one with a cold, sore throat or other infection was admitted to the building. Education of the children was continued, and a full time occupational therapist was available to keep them happy and busy when they were not at their school work. The children slept outdoors, even in the severest weather, and were kept in the open air as much as possible during the day. Throughout the winter all the children were free from respiratory infections and recurrences of rheumatic fever. During the summer of 1939, 15 children were discharged, the rest being kept for further care. Some of the discharged children since returning home from the sanatorium have had infections of the respiratory tract and other minor ailments, but none have had recurrences of rheumatic fever or evidence of increased heart disease. During the following winter only children with active rheumatic infection were placed. The policy of maintaining a closed colony was abandoned, and children were admitted as beds became available. The only restrictions were that the disease should be well established and that the children should be between 5 and 12 years of age and free from chorea and heart failure. During the second year 28 children were admitted. When they were free from all evidence of active infection a gradual increase in activity for two months was allowed and then they were permitted full activity. Instead of being sent home at this time they were kept for a further few months, during which it was hoped that any latent rheumatic infection would be overcome and a state of vigorous health attained, so as to enable them to withstand the rigors of their home environment, which was probably poor at best. The results were as satisfactory as those during the first year. The children remained free from infections of the respiratory tract except for one or two minor head colds. Rheumatic infection did not recur in any instance. During the second year, throat and air cultures were taken regularly. A considerable number of hemolytic streptococci were found in the throat cultures; the typing of these is not finished. The air cultures give bacteriologic evidence in support of the value of the open air environment. With freely circulating air that is rapidly diluted with the outer air there is relative freedom from bacterial contamination in comparison with the usual hospital wards. Bacterial determinations made during the winter, spring and summer compared favorably with similar counts obtained in a carefully supervised, air-conditioned, infection-free premature infant nursery and in infant cubicles protected with ultraviolet radiation. Hemolytic streptococci and other pathogenic bacteria were found in air samples from hospital wards, whereas only staphylococci, molds and a variety of nonpathogenic organisms were obtained at the sanatorium. The authors draw no conclusions as the time has been short and the number of cases limited, but they believe that the treatment is rational and economically sound and deserves further trial.

Southwestern Medicine, El Paso, Texas

24:393-422 (Dec.) 1940

Postgraduate Medical Education. O. Egbert, El Paso, Texas.—p. 393.
Partial Gastrectomy in Certain Cases of Duodenal Ulcer. V. C. Hunt, Los Angeles.—p. 394.
Spinal Cord Tumors. P. M. Bassell and B. N. Blanton, Temple, Texas.—p. 399.
Newer Aspects of Low Back Pain. L. W. Breck, El Paso, Texas.—p. 401.
The Problem of Tuberculosis in New Mexico. W. I. Werner, Albuquerque, N. M.—p. 404.
Report of Severe Reaction Following Use of "Monolate" as Sclerosing Solution. H. D. Cogswell and C. A. Thomas, Tucson, Ariz.—p. 408.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Glasgow Medical Journal

16:147-198 (Nov.) 1940

*Calcium Gluconate in Cardiac Failure: Clinical Pharmacology and Therapeutics. A. S. Rogen.—p. 147.
Contrast in Methods of Vaccination: By Intradermal Injection and by Linear Scratch. T. McEwan.—p. 163.
Fatal Agranulocytosis After Sulfapyridine Therapy. W. K. Anderson, S. Horowitz and T. W. Palmer.—p. 172.

Calcium Gluconate in Cardiac Failure.—Rogen determined by auscultation the heart rate of 26 patients with varying degrees of cardiac failure before and after the intravenous administration of 10 cc. of a 10 per cent solution of calcium gluconate. Preliminary excitement was minimized by accustoming the patient to the routine of injection. As a control, intravenous sodium chloride was given to some patients but without significant alteration of heart rate. Twenty of the 26 patients reacted to the calcium gluconate by a slowing of the heart rate of from six to seventy-eight beats per minute and in 6 no change occurred. The time of maximal slowing varied from five minutes to more than twenty-four hours. Five of the patients who experienced no appreciable change in heart rate had auricular fibrillation. The greatest degree of slowing among half the patients with regular rhythm did not occur within ten minutes of the injection, whereas it did among the patients with auricular fibrillation. The fall in heart rate produced by calcium depends on the original rate. The relationship between percentage of fall and original rate in patients with regular rhythm and the absence of this when there are beats of ectopic origin as in auricular fibrillation suggest that one action of calcium is to stimulate the vagus mechanism. The author also studied the effect of atropinization on the action of calcium of 15 patients with cardiac failure and regular heart rhythm. Calcium failed to have any effect on 10 patients during atropinization. Slowing was noted in the remaining 5. It is assumed that in the first group the vagal paralysis produced by atropine was responsible for the absence of calcium bradycardia, suggesting that calcium exerts its effect through the vagal system. The failure of atropine to abolish completely the slowing action of calcium of the 5 patients was probably due to the fact that vagal paralysis was incomplete. The effect of calcium gluconate on the electrocardiograms of 12 patients was studied, and the results show that calcium may affect the heart indirectly through the vagal system and directly through the myocardium. Evidence of sinus slowing, the greater effectiveness of calcium in reducing the heart rate in regular rhythm and the abolition of the bradycardia effect by atropine suggest a vagal action. Increase in the amplitude of the T wave and a greater tendency to coupling and lengthening of diastole in the electrocardiograms indicate some direct action on the heart muscle. The fact that these observations are not so frequent as the sinus slowing suggests that as a rule larger doses of calcium are required to produce the myocardial effect than to stimulate the vagus control. The blood pressures of 21 patients (seventy-two determinations) were determined half an hour before and at intervals after the injection of calcium gluconate. On thirty-six occasions there was an increase in systolic blood pressure varying from 4 to 20 mm. of mercury and on thirty-six a decrease of from 4 to 24 mm. The pulse pressure was increased on eighteen occasions, decreased on eleven and unaltered on the remainder. Neither the heart rate nor the rhythm had any effect on the direction of the systolic or pulse pressure changes. The venous pressure of 18 patients was estimated, and in 11 the injection of calcium gluconate was followed by a slight fall and in 7 there was no change. The effect of the calcium on the respiration of 6 patients was studied by means of a stethograph; in 5 the rate was slightly reduced, in 3 the irregularity was diminished and in 3 the amplitude decreased. Calcium gluconate therapy of these patients lowered the viscosity of the blood and, it may be assumed, lessened the work of the heart and to that extent led to improvement in circulation. Calcium gluconate has little immediate effect on the urinary output, but it greatly enhances the diuretic action of the digitalis glucosides. Fourteen of the 41 patients given systematic calcium therapy have experienced definite bene-

fit. Many of the 41 patients had failed to respond to other forms of treatment, including digitalis. Improvement was considered to have occurred only when there was reduction in pulse rate, a diminution of edema, a reduction in the rate of breathing or a marked lessening of cyanosis, together with subjective improvement of at least three days.

Lancet, London

2:707-736 (Dec. 7) 1940

*Chemotherapy of Abdominal Actinomycosis. G. C. Dorling and N. L. Eckhoff.—p. 707.
*Oral Anterior Pituitary Extract (Collip) in Diabetes. R. D. Lawrence and F. G. Young.—p. 709.
*Pancreotropic Factor of Anterior Pituitary Lobe. H. P. Marks and F. G. Young.—p. 710.
Treatment of Irreparable Rupture of the Urethra. A. Jacobs.—p. 712.
Prevention of Acute Adhesive Obstruction. A. J. C. Latchmore.—p. 713.
Blindness Following Hematemesis. C. H. Bamford and H. Barber.—p. 715.

Chemotherapy of Abdominal Actinomycosis.—According to Dorling and Eckhoff, a patient with abdominal actinomycosis usually is admitted to the hospital with acute appendicitis, often with peritonitis, and an operation is performed for removal of the appendix and drainage. Discharge continues from the incision for weeks and months, and not infrequently secondary operations have to be performed for collections of pus in the pelvis, subphrenic spaces or other parts of the abdominal cavity. A typical actinomycotic abscess often develops in the liver, and when this happens death is almost certain. At some time during this period actinomycosis may be recognized from an examination of the discharge. Many methods of treatment have been tried, but no specific has been discovered, and this has led to a further search for a drug that would be of value. Several investigators having employed sulfanilamide preparations, the authors decided to try this form of chemotherapy not without some skepticism. In view of the striking benefit in 1 case, they have since instituted it whenever actinomycosis has been suspected. They describe 5 cases of abdominal actinomycosis treated with sulfanilamide, sulfapyridine or both. Although all were severe infections there were four complete recoveries and one death. In 1 case, in which high voltage roentgen therapy also had been used, a later operation showed that all evidence of disease had disappeared. The authors conclude that chemotherapy should be tried early in all cases of suspected abdominal actinomycosis. Two or three courses of sulfapyridine, each lasting a week and with a week between, are usually needed.

Oral Anterior Pituitary Extract in Diabetes.—Lawrence and Young point out that Collip claims to have observed an important "antidiabetogenic" effect produced by a primary alcoholic extract of anterior pituitary tissue administered by mouth. The authors attempted to confirm Collip's observations on diabetic human beings and on dogs made permanently diabetic by the daily injection of anterior pituitary extract for a short period. No evidence was obtained to support Collip's claim that the oral administration of the primary alcoholic extract of pituitary tissue exerts a profound antidiabetogenic effect. Collip suggested that this extract produces its effect through a pancreotropic action on the islets of Langerhans.

Pancreotropic Factor of Anterior Pituitary Lobe.—Marks and Young report investigations on the pancreotropic activity of different anterior pituitary preparations, undertaken to verify Collip's suggestion that the anterior pituitary tissue exerts its antidiabetogenic effect by virtue of pancreotropic action. The ability of such preparations to induce a significant rise in the insulin content of the pancreas of a male Wistar rat treated daily with extract for two weeks was used by the authors as an index of pancreotropic activity. The pancreotropic activity of sheep pituitary crude extract was found to be about half that of ox pituitary extract, while horse pituitary extract was found to be inactive under comparable conditions. Although a preparation of prolactin possessed a high degree of pancreotropic activity, considerations are advanced for believing that the pancreotropic factor (which is probably not a hormone) is not identical with prolactin or with the gonadotropic, thyrotropic or glycotropic substances. Treatment with testosterone, unlike treatment with estrogens, does not raise the insulin content of the pancreas of the male rat, and the pancreotropic action of pituitary extract appears not to be mediated by the male gonads. Collip's primary neutral alcoholic extract of pituitary tissue was found not to be significantly pancreotropic when administered to rats either by subcutaneous injections or by mouth.

Presse Médicale, Paris

48:953-968 (Nov. 27-30) 1940

Reactivation of Latent Foci of Tuberculosis; Endogenous and Exogenous Reinfection. E. Sergent.—p. 953.
*Sterilization of Tuberculous Lesions and Extinction of Sensitivity to Tuberculin in Man Based on Experimental Considerations. A. Saenz.—p. 955.
Relation of Hypertrophy of Prostate to Senescence. P. Thévenard.—p. 957.

Sterilization of Tuberculous Lesions.—Saenz applies some conclusions drawn from experiments with guinea pigs, involving sterilization of latent tuberculous lesions, desensitization and reappearance of sensitization after reinfection, to man. The sterilization and extinction of sensitivity to tuberculin here discussed, never observable when guinea pigs are inoculated with even minimal quantities of virulent tubercle bacilli, concern primary lesions, communicated to guinea pigs by inoculation with greatly attenuated vaccines, such as the BCG. Sterilization varies in accordance with the original concentration of vaccine used. The author points out (1) that great individual differences observed in the time requirement for securing complete negative tuberculin reactions in the guinea pig are encountered also in man and (2) that in guinea pigs a long interval of time occurs between sterilization of primary inoculated lesions and the disappearance of sensitivity. The fact that in the animal sterilization of the lesions may be observed after three to four months, whereas tuberculin positive reactions may continue for some ten to twelve months and longer justifies the assumption that other factors besides living tubercle bacilli may be at work, namely modification of the colloidal setup of the protoplasm of certain cells, which many persist for a long time. Parallel conditions may reasonably be inferred to exist in man. Sterilization is complete in man when calcification has occurred, but tuberculin reactions continue positive for a much longer time. The author was also able to confirm the guinea pig experiments of other investigators who found that induced reinfection after spontaneous desensitization was accompanied with a marked acceleration in the recurrence of sensitivity. This condition seems also to occur in man. Hence there persists, though the skin is completely desensitized, a certain degree of allergy or an aptitude to react differently, which needs to be kept in mind when one is formulating conclusions on sensitivity and desensitization.

Schweizerische medizinische Wochenschrift, Basel

70:1093-1116 (Nov. 16) 1940

*Spondylolisthesis. E. Burckhardt.—p. 1093.
Buerger's Disease. K. Scheyer.—p. 1102.
Perniclous Anemia and Hypothyroidism. A. Vannotti.—p. 1106.
Influence of Short Waves on Metamorphosis of Tadpoles. F. Ludwig and J. von Ries.—p. 1108.
Observations on Action of Caffeine-Free Coffee and Significance of Aromatic Substances as well as Discussion of Stimulating and Reviving Effect. W. Kretschmer.—p. 1110.

Spondylolisthesis.—According to Burckhardt, spondylolisthesis and spondylolysis interarticularis (Neugebauer) are essentially the same disease process in different stages of development. The beginning stage of spondylolysis, that is the stage before displacement of the vertebral body, is designated as spondylolisthesis imminens. The elicitation of the clinical symptoms can be spontaneous, but in many cases a trauma is held responsible, particularly when it caused a sudden excessive tension of the back muscles. In two thirds of the 63 cases reviewed here no accident could be demonstrated. The first clinical signs are often slight. Generally the patient complains of backache; he has a feeling of unsteadiness over the sacrum and has the sensation of falling forward and he reacts against this by lifting the pelvis. The pains radiate into the legs occasionally during the initial stage, which is explained by the close relation of the intervertebral foramen (nerve root) to the cleft of the vertebral arch (interarticular portion). Roentgenographic examination is indispensable for a reliable diagnosis. The interpretation of the

roentgenogram is easy in case of manifest spondylolisthesis, particularly if the exposure was lateral. However, the imminent spondylolisthesis is often difficult to recognize; the lateral exposure alone may be inadequate, but the anteroposterior exposure reveals the cleft more clearly, particularly if in the presence of a kyphotic lumbar vertebral column the projection is made from an anterior-inferior toward a posterior-superior direction. Oblique exposures should be added in all doubtful cases. Of the 63 cases of spondylolisthesis (37 men, 26 women), 46 involved the fifth, 11 the fourth and 2 the third lumbar vertebrae. In 3 cases the fifth and fourth and in 1 the third and second lumbar vertebrae were involved. An olisthetic fifth lumbar vertebra generally shows a greater displacement than does the fourth or another lumbar vertebra. The different degrees of displacement are found in all age groups. The lumbosacral angle (that is, the angle opening posteriorly between the axes of the fifth lumbar and first sacral vertebrae) widens proportionately to the degree of displacement. This angle measures 140 degrees under normal conditions and 160 degrees in spondylolisthesis. The angle formed by the inferior articular process and the root of the arch, which is normally 115 degrees, is likewise enlarged in spondylolisthesis. This enlarged angle of the arch is not specific for spondylolisthesis. Junghanns detected this enlargement also in pseudospondylolisthesis. This angle measures 126 degrees in imminent spondylolisthesis and it contributes to the elongation of the arch. It seems to hinder the reposition. The intervertebral disk always shows secondary degeneration in spondylolisthesis, that is, the loosening of the interarticular portion of the vertebral arch is primary. However, not until the intervertebral disk starts to yield does the sliding become manifest. The author treats spondylolisthesis in adolescents, in whom recent gliding justifies it, first by a reposition of the sliding vertebra. If possible, he subjects all patients with spondylolisthesis, under local anesthesia, to the Albee-de Quervain operation with paraspinal double tibial graft. After this the patient must avoid great physical exertion for from six to twelve months and he must be fitted with a lumbar support.

Hospital, Rio de Janeiro

18:893-1082 (Dec.) 1940. **Partial Index**

*Hypovitaminosis B_1 in Cardiovascular Disease. R. de Siqueira and R. Segadas.—p. 943.
Endocrine and Sympathetic Dystonia. G. Bandeira.—p. 1039.

Hypovitaminosis B_1 in Cardiovascular Disease.—Siqueira and Segadas point to the frequency of heart disease as a result of lack of vitamin B_1. The deficiency brings about general nutritional metabolic dysfunction in which the myocardium is involved. The authors review the literature and report 8 cases of their own and several from the literature. They found that chronic alcoholism, pregnancy, diabetes, hyperthyroidism, prolonged infection, malnutrition and cachexia, chronic disease of the digestive tract and latent cardiac insufficiency are the underlying or determining causes of hypovitaminosis B_1 and of the cardiac complications. The early symptoms, palpitation, a feeling of oppression in the chest and of precordial distress, dyspnea on exertion and irregularities in the heart action are, as a rule, benign and regress on administration of vitamin B_1. The changes in the size of the heart and cardiac insufficiency appear late in the course of the condition, are more or less grave and may become permanent. The electrocardiograms exhibit abnormalities of the ventricular complex, with reduction of the amplitude of the R or S waves, lack of level of the ST segment and deformation or inversion of the T wave, which may be transient or permanent in accordance wit' the acuteness of the myocardial lesion. The author concludes that in all cases of heart disease in which hypovitaminosis B_1 is suspected it is advisable to clarify the diagnosis by the therapeutic test of administering vitamin B_1. The treatment of the disease consists in intramuscular injections of vitamin B_1 in daily doses of 0.01 or 0.02 Gm. for the first three weeks, after which the vitamin is given by mouth. Rest and a normal diet with abundance of fruits and vegetables are indicated. The condition responsible for hypovitaminosis should be treated in all cases. Cardiac tonics and diuretics are indispensable in the presence of cardiac insufficiency.

Revista Médica Latino-Americana, Buenos Aires

26:1-130 (Oct.) 1940. **Partial Index**

*Pharmacologic Action of Potassium, Calcium and Magnesium Ions on Respiratory Centers. B. L. Velázquez.—p. 1.

Action of Potassium, Calcium and Magnesium Ions on Respiratory Centers.—Velázquez found no reports in the literature on the action on the respiratory centers of ions when injected by the suboccipital route, or on their clinical application in the treatment of respiratory paralysis of cerebral origin. He induced a respiratory paralysis in dogs by intravenous injection of a mixture of morphine and chloral hydrate. Isotonic solutions of drugs capable of ionic dissociation were injected suboccipitally at a temperature of 38 C. after removal of an equal amount of cerebrospinal fluid. Potassium chloride in a dose of 0.02 Gm. had the effect of stimulating and regulating respiration and increasing the blood pressure. Calcium chloride, 0.05 Gm., caused respiratory paralysis without any alteration in the blood pressure. Magnesium in a dose of 0.05 Gm. also caused respiratory paralysis. Potassium chloride when administered in the mentioned dose during the effect of calcium chloride caused paralysis and lowered the blood pressure. When the drug was administered after magnesium chloride it stimulated respiration and caused a slight increase in the blood pressure. Repeated experiments gave constant results. The author concludes that potassium chloride in doses of 0.02 Gm. administered by suboccipital injection is the most efficacious drug for the stimulation of the respiratory centers and for regulation of lowered blood pressure caused by disturbances of the respiratory centers. The results suggest clinical application of the drug in respiratory paralysis due to poisoning of the nervous centers, respiratory syncope in anesthesia and paralysis from other causes. The injections should be given by the suboccipital route.

Münchener medizinische Wochenschrift, Munich

87:1045-1076 (Sept. 27) 1940

Circulatory Function Tests in Soldiers, with Special Reference to Work Test Electrocardiogram. P. Laurentius and F. Klopffleisch.—p. 1045.
*Clinical Aspects and Therapy of Lymphatic Leukemia. R. Stöger.—p. 1047.
Active Therapy of Febrile Abortion and Contribution to Problem of Secondary Sterility. H. Winkler.—p. 1052.
Bromine Preparation as Efficient Substitute for Iodine. H. Städtler.—p. 1054.
Indications for Surgical Therapy in Diseases of Digestive Organs and Peritoneum. H. Junghanns.—p. 1055.

Lymphatic Leukemia.—Stöger reviews observations on 53 cases of lymphatic leukemia. The fact that 39 of the 53 patients were men indicates that the disease is much more frequent in men than in women. The age of greatest frequency was the sixth and seventh decades, which contradicts reports in the literature according to which the disease is more frequent in younger age groups (from 20 to 40 or 30 to 39). The symptoms which brought the patients to the physician varied considerably, but swellings of the lymph nodes and the resulting pressure pains were most frequent. Increasing pallor, weakness, hemorrhages and raised temperatures were other early symptoms. In 5 cases cutaneous symptoms were observed. The skin lesions vary greatly; they may assume the form of prurigo nodularis, erythrodermia or may resemble mycosis fungoides. The blood picture or the result of sternal puncture is the decisive factor in the diagnosis of such cutaneous lesions. Lymphatic leukemia was discovered accidentally in the course of a blood analysis of 4 patients who were free from complaints although a splenic tumor was already present. Swelling of the lymph nodes in the cervical, the inguinal, the axillary and perhaps the mediastinal regions, splenic tumor and enlargement of the liver are the most striking aspects of lymphatic leukemia. Hyperplasia of Waldeyer's tonsillar ring, although not pronounced in old patients, was always present in young patients. The greatly enlarged tonsils, which are characterized by a peculiar glossiness and may exhibit submucous hemorrhages, unfortunately have been ectomized at times, although tonsillectomy is not only useless but even dangerous. This justifies the demand for a thorough internistic examination and a careful blood analysis previous to a tonsillectomy, particularly in the presence of hypertrophic palatine tonsils. Gastrointestinal or

neurologic symptoms were not observed. The genital organs may become involved and priapism may result. The temperature was alternately subfebrile and normal in 35 of the 53 patients, 6 patients had septic fever curves and the temperature of 12 patients was normal. Metabolism tests usually disclosed a noticeable increase in the basal metabolic rate. Examination of the urine almost always disclosed an increased elimination of urobilinogen. The blood picture is of greatest importance. The increase in leukocytes is usually considerable. The red blood picture is often characterized by a slowly progressing anemia which the author ascribes to three causes: (1) hemolysis, which is proved by the increased elimination of urobilinogen and by heightened bilirubin content of the serum, (2) displacement of red marrow by leukemic infiltration and (3) unknown toxins. The prognosis of lymphatic leukemia is unfavorable. According to the author's observations the disease lasts from two to five years, but death is usually the result of intercurrent diseases. Dietetic treatment and the administration of vitamin C exerted no influence in the reported cases. The improvement after fever therapy was of short duration. Blood transfusions proved valuable in the cases in which the anemia predominated. Roentgen therapy may improve the symptomatic complaints, but it should be employed only in carefully selected cases. It should be postponed as long as possible and should never be tried in cases in which there are less than 4,000 granulocytes. The improvement in the general condition should be the chief aim of the treatment, and arsenic preparations have proved effective in this respect. Heliotherapy in the form of sun baths has produced excellent results in early cases.

Medizinische Welt, Berlin

14:445-472 (May 4) 1940

Gunshot Lesions of Spinal Cord and Their Treatment. H. Peiper.—p. 445.
*Causal Therapy in Angina Pectoris. M. Hochrein.—p. 449.
Modifications of Electrocardiogram and of Activity of Heart After Calcium Injections. J. Kupas.—p. 453.

Causal Therapy in Angina Pectoris.—Hochrein discusses the pathogenesis and therapeutic management of angina pectoris. Nervous disturbances as well as coronary insufficiency may characterize the syndrome. The therapy must therefore be based on the observations in each case. Coronary insufficiency seems to constitute the inciting cause. The clinical picture, however, is determined by the tonus of the autonomic nervous system and the stimulus threshold of the sensory nervous system. Anginal pain is only a symptom and not always present where coronary insufficiency is encountered. Forty per cent of the patients with coronary insufficiency and 15 per cent with coronary sclerosis were free from pain. In 163 cases, gastric symptoms occurred eighty-nine times, and obesity was present thirty-four times, both conditions predominating at the age level of from 40 to 60 years. Focal infections occurred twenty-two times. In attacking individual conditions with an individualized regimen the author was able to cure angina pectoris in granuloma affecting the teeth by care of the teeth; angina pectoris due to rectal carcinoma with secondary gastric involvement by surgical intervention; angina pectoris, ultimately traceable to a hiatus hernia and anacid gastritis, by a change in the manner of living, diaphragmatic exercises and treatment for gastritis; esophageal spasms by a dietary regimen and anesthesia tablets, and a vagus neurosis, induced by athletic inactivity, by resumption of sports activities. Coronary insufficiency was combated directly by reducing cardiac strain to a minimum and by stimulating the blood circulation of the heart. This was effected by combating intestinal fermentation and constipation and by stimulating portal circulation. Caffeine, barbituric acids, carbonic acid inhalations and short wave irradiation were variously employed. (The use of nitrites and epinephrine is discouraged.) Mental therapy is regarded as an essential part of the therapeutic program. Most cases of angina pectoris can be relieved. Causal therapy not only assuages pain but prevents the possible evolution of an acute cardiac weakness, such as myocardial infarction and instant death from heart failure. Angina pectoris in obese persons was often permanently cured by simple attack on intestinal fermentation and excess weight.

Zeitschrift für Tuberkulose, Leipzig

85:65-192 (Sept.) 1940. **Partial Index**

*Residual Cavities After Thoracoplasty and Their Treatment by Means of Suction Drainage. A. Schuberth.—p. 87.
Microroentgenographic Method of Abreu. H. Grass.—p. 94.
*Problem of Primary Tuberculous Infection in Young Adults. H. Gerberding.—p. 101.

Suction Drainage of Residual Cavities.—Schuberth points out that, in spite of all efforts to avoid residual cavities after thoracoplasty, there remains a certain number which even additional plastic interventions do not affect. The author sees the cause for this in the tendency of cavities to gravitate toward the so-called dead angle. Another hindrance to the shrinkage is the unfavorable air pressure conditions in the cavity. The internal air pressure is dependent on the discharging bronchus, the patency of which may be modified in the course of the thoracoplasty; the bronchus may be bent or displaced, and this may have a favorable or an unfavorable effect, depending on the nature of the case. In unfavorable cases, inflation may result from the valvular action of the discharging bronchus. The suction drainage produces a negative pressure and thus favors shrinkage and, at the same time, it removes the harmful waste products from the cavity. The method consists in introducing into the cavity a rubber catheter through the thoracic wall and in suctioning off the contents. Of four residual cavities two shrank almost completely and the sputum as well as the discharge from the catheter was free from bacilli. In another case in which the residual cavity had existed for five years the cavity shrank to one half its former size and the sputum is now free from bacilli. In the fourth case the suction was begun only recently, but a considerable shrinkage has already taken place. The results are sufficiently favorable to recommend the method for all residual cavities which show no tendency to disappear after thoracoplasty.

Primary Tuberculous Infection in Young Adults.—According to Gerberding only 50 per cent of those who leave school have been infected with tuberculosis. A large number become infected during adolescence at the time of entering an occupation. The course of the primary infection depends chiefly on the natural nonspecific resistance which develops among a population by selection of the resistant. The epidemiologic conditions prevailing in Germany at present usually exert a favorable effect on the primary infection in adolescents; as a rule, it remains latent. The morbidity of those who have a negative tuberculin test is lower in Germany than in the more northerly located European countries. Nevertheless, severe and even fatal first infections occur in adolescents and the question is raised whether some severe cases of tuberculosis in adolescents might not be due to the fact that the primary infection took place only shortly before. In addition to the nonspecific resistance, the age at which the first infection is acquired is important. The instability of the endocrine-sympathetic system at puberty often exerts an unfavorable effect. Although it is no longer generally accepted that the healed primary tuberculous focus causes a specific immunity, the author is inclined to believe that the healed primary focus provides some protection against small, occasional new infections and, on the other hand, is maintained and renewed by such infections. The tendency to exacerbation during the puberal age makes it inadvisable to let persons of the ages between 15 and 22 work in tuberculous surroundings. If young persons with negative tuberculin reactions are at all permitted to work in tuberculous surroundings, they should be kept under observation and should be tuberculin tested from time to time. Serial tuberculin tests should be made not only on school children but also on young adults. Those who have negative tuberculin tests should be reexamined at definite intervals until a specific allergy is detected. Such serial examinations would have great prophylactic value: 1. By learning place and time of infection the source of infection could be traced. 2. The tuberculosis would be detected and cured during the earliest stage before organic destruction has taken place. 3. The epidemiologic conditions could be better understood if the time of the spread of infection was known. 4. It might be possible to solve the question of whether phthisis develops more often from primary and secondary tuberculosis in which cure did not take place, or from new infection.

Book Notices

Physiotherapy in Medical Practice. By Hugh Morris, M.D., D.M.R.E., Radiologist, Manchester Corporation Hospital Services, Manchester. Cloth. Price, $4.50. Pp. 276, with 102 illustrations. Baltimore: William Wood & Company, 1939.

The frequency with which monographs on physical therapy are offered to the medical and allied professions in England perhaps indicates that interest in its procedures has reached the broad level of the average practitioner. In the absence of official information from its national body this is now supplied by those whose views are largely drawn from personal experience and past empirical practices. While this should not be interpreted as derogatory to efforts and beliefs presented in such publications, they often lack that indirect stamp of approval insisted on by scientific bodies and demanded by modern physicians schooled in the critical interpretation of physical and speculative data. In the main this book follows in outline volumes which have been published in the past both here and abroad and often recapitulates the early horse and buggy practices with virtually the same nuances and reasons found in the writings of such departed pioneers as Sir Lewis Jones, Massey and Snow. The value of the present text lies in the fact that it presents in broad sketches the elementary principles of electrotherapy as well as the conventional use of light for clinical purposes in a diction for easy consumption but questionable as guidance for the inexperienced. By unintentioned innuendo it leaves an impression that one has but to peruse such somewhat generalized exposition of the physical nature and clinical application of at least twelve variable and important agents and innumerable but inadequately described technics to be able to apply them with precision and success. At best it is felt that the work provides a lucid but rather skeletalized exposition of the component parts of a major section of physical therapy. It is rich in illustrative material but offers no course for collateral reading in the form of references or bibliography, so that one is entirely dependent on the author's personal views and must in part rely on the uncertain guidance of pen and ink drawings or halftones that are easy on the eye but confusing to the uninitiated. The work, however, is not without merit as introductory reading for students under supervision and could well be utilized to a certain extent for undergraduate instruction.

Diathermy: Short Wave Therapy, Inductothermy, Epithermy. By William Beaumont, M.R.C.S., L.R.C.P., Physician-in-Charge Physiotherapy Department, Westminster Hospital, London. Cloth. Price, 10s. 6d. Pp. 303, with 106 illustrations. London: H. K. Lewis & Co., Ltd., 1939.

This small volume attempts to evaluate the physical and clinical action of high frequency currents embraced under the major caption of diathermy. Its purpose is to present the fundamental principles in such an elementary fashion as to render them comprehensible to that large group of practitioners interested in but unfamiliar with its therapeutic possibilities. Unfortunately, in attempting to present a total picture within what might be termed a constricted framework the author succumbed to certain faults broadly attributable to imperfect balance of his literary material and enthusiasms that lack the basis of objective experience. In the space of ten chapters Beaumont devotes nearly 80 per cent of his exposition to the elaboration of old data associated with that diminishing practice called conventional diathermy and the remainder to a sketchy evaluation of the most recent innovations in short wave diathermy and its therapeutic modulations. Apart from the fact that short wave diathermy has been proved technically superior for the deep heating of tissues, its newness and greater portent should have been the impulse to transmit all nontechnical information pertaining to its physiologic and clinical nature in that detail lavished by the author on a vanishing practice. Accordingly one may deduce that this work is largely made up of perhaps unintentioned padding that describes and evaluates a fast receding practice and, for purposes of enlightening the inexperienced, resorts to archaic illustrations which depict by pen sketches certain technics that neither obey the laws of gravity nor adequately stress those of physiology. The author pays homage to the untimely passing of his distinguished colleague Elkin Percy Cumberbatch, to whom he dedicates his book. This grandiose gesture is supported by all who have been fortunate recently to read and appreciate the fact that this deceased pioneer wrote one of the most understanding of books on diathermy. The two chapters devoted to short wave diathermy and to electromagnetic induced fields offer little that has not already been expatiated on more clearly, detailedly and informatively both here and abroad. To Beaumont, so-called inductothermy is the alpha and omega of short wave therapy, an opinion not supported by fact.

Congenital Syphilis. By Charles C. Dennie, B.S., M.D., Professor of Dermatology, University of Kansas Medical School, Kansas City, Kansas, and Sidney F. Pakula, B.S., M.D., Visiting Pediatrician to Children's Mercy Hospital, Kansas City General Hospital, Alfred Benjamin Clinic, and Menorah Hospital, Kansas City, Missouri. Cloth. Price, $8. Pp. 596, with 133 illustrations. Philadelphia: Lea & Febiger, 1940.

There is a need for a competent modern monograph on congenital syphilis. The authoritative presentation of Jeans and Cooke is now 10 years old, therefore largely outdated, and is moreover buried in a System of Clinical Pediatrics where it is available to relatively few readers. Dennie and Pakula have attempted to fill this need, but unfortunately without conspicuous success. The cooperation of specialists is required to combat congenital syphilis successfully. The prospective mother and the diseased as well as the apparently healthy child must all be considered before the picture is complete. True these phases are considered and there is a presentation of the management of syphilis in pregnancy. If congenital syphilis is ever to be eradicated this can be done only by the recognition of syphilis early in pregnancy and by vigorous antisyphilitic treatment throughout. The authors conclude that complications actually do not occur with the same frequency with which they appear in syphilis uncomplicated by pregnancy. Several chapters are devoted to the early and late manifestations of the disease as they affect various organs. The description of the ocular changes is good. Much of the volume is devoted to therapy in which indications for treatment, choice of drugs and the technic of syringe administration are described. Various types of pyrotherapy are discussed. The book is generously supplied with splendid clinical photographs and roentgenograms which illustrate various stigmas and malformations of congenital syphilis. The text is based on the large clinical experience of the senior author and on the literature. Unfortunately the material is not well organized. In many sections the emphasis seems to be on adult acquired rather than on congenital syphilis. Portions of the text are carelessly written and proof read, with many improper usages of words (e. g. "gravity" for "gravidity") and misspelling of proper names. Recent important contributions to the literature are often omitted from discussion, especially in the disputed field of the roentgenologic diagnosis of congenitally syphilitic bone lesions. Obviously a revision of the book which would take into account these criticisms would be an improvement.

Text-Book of Ophthalmology. By Sir W. Stewart Duke-Elder, M.A., D.Sc., M.D., Surgeon Oculist to H. M. The King. Vol. III: Diseases of the Inner Eye. Cloth. Price, $18.50. Pp. 2097-3470, with 1,140 illustrations. St. Louis: C. V. Mosby Company, 1941

The third volume of this momentous textbook, which really should be designated an encyclopedia, deals with diseases of the inner eye. The manuscript was completed on Jan. 1, 1940 and the printing was scheduled to be finished by April, but the material, which was bound in this country, did not arrive until September. Consider that the author is the chief consulting ophthalmic surgeon to the British army and completed the volume under the handicaps imposed by that work, that the printing was done under the bombing of London and that the material had to be transported across the submarine infested Atlantic.

This volume is divided into seven chapters, which deal respectively with the uveal tract, the retina, the optic nerve, the lens, the vitreous body, glaucoma and hypotony, and intraocular parasites. The book is large and one hundred and sixty-four of the illustrations are in color. The printing and publishing companies responsible for the work have produced a volume of which they well may be proud in every respect. Typographic errors are conspicuous by their absence. The illustrations are uniformly excellent and clear cut, and even photomicrographs

of high magnification are so precisely reproduced that they really illustrate the points the author wishes to emphasize.

In a volume of this size and detail, it is obviously impossible to do more than discuss generalities. For example, in the section dealing with the uveal tract the author has avoided the old method of discussing diseases of the tract from an anatomic point of view with consequent repetitions and has plunged boldly into a consideration of pathologic processess of the tract from an etiologic point of view. This method presents a new outlook to the reader and offers a logical sequential story that lessens the labors of study. The chapter on the retina is a masterpiece. The forty year old shackles welded by Leber of Heidelberg have been burst asunder and the author presents a picture of diseases of the retina which is a composite of his own careful observations and those of other modern investigators such as Friedenwald of Baltimore. The result is a beautiful simplification for the reader.

But in the chapter on anomalies of intraocular pressure, Duke-Elder comes into his own. Not only are the standard clinical pictures presented, but even more important are his personal views, based on exhaustive investigative work and thoughtful analyses. He hints at a time in the near future when the terms "primary" and "secondary" glaucoma will be discarded and all glaucoma will be recognized in its true light as purely a secondary affair due to known causes. This chapter must be read word for word and digested carefully, and if that is done there will be fewer failures in the diagnosis of glaucoma and more successes in the treatment, with the ultimate result of a marked step forward in the worldwide movement for the prevention of blindness.

The standards set by the author are so high that one wondered whether they could be maintained in each succeeding volume. The three that have appeared so far have answered that question to complete satisfaction, so that the only worry about the fourth and last volume is When can it be written and when will it be published? This textbook of ophthalmology is an absolute "must" for every ophthalmologist. There is no question that it will do much to raise the standards of ophthalmic practice.

America Gives a Chance. By John J. Mullowney, M.D. Cloth. Price, $3. Pp. 171, with illustrations. Tarpon Springs, Florida: The Author, 1940.

England has (or had) a sheltering home where orphans of genteel but indigent parents are cared for while being schooled in Canadian lore, in which country they are destined to be settlers. Thousands of such boys have become citizens of Canada, and among them was John Mullowney, who found a foster home with Murdo McLeod in a cabin in the Canadian woods. After eight years of that life, Mullowney lived with McLeod's father until the latter died. John then worked on a farm in New Hampshire and there met Dr. Harry Boynton, who took to the lad. By working in the summer at hotels in the White Mountains, John was able to go to preparatory school at Exeter, where he mowed lawns and won a scholarship for three successive years. He then spent a year at Harvard and a year as principal of a small high school. In 1904 he enrolled in the University of Pennsylvania School of Medicine, Philadelphia, where in spare time, he was a laundry agent and a book agent. After graduating at Pennsylvania and passing the examination to practice, he went to China as a medical missionary. Dr. Mullowney was in China at a time when great political changes were going on. He met some of the Chinese leaders, notably Hwang Hsing, for whom he edited a book "A Revelation of the Chinese Revolution." When he came back to America he accepted a position as inspector of tenements for the Philadelphia City Department of Health and later a position in the state department of health. In four years he was appointed head of the science department of Girard College in Philadelphia. Stephen Girard left $6,000,000 to establish a college for poor white male orphans. The first class of one hundred orphans entered its first white marble building in 1848. The original endowment of $6,000,000 has grown now, the author says, to $88,000,000. In describing his home in Germantown, he makes an unusual remark for a man educated as a scientist. He writes "As with all 'Cancer born' people (people born from June 20 to July 21), I was very domestic." Four years later Dr. Mullowney was offered the presidency of Meharry Medical College in Nashville, Tenn., and there he remained until he retired in 1938 and went to live in Florida. He draws a vivid picture, first of an unrecognized school without buildings, equipment and adequate organization, and second of a recognized and new Meharry Medical College with a $2,000,000 well equipped plant. Dr. Mullowney was able to obtain this great sum through the generosity of the Rockefeller Foundation, Mr. Edward Harkness, the Nashville Chamber of Commerce, Mr. George Eastman, the Rosenwald Foundation and the Methodist Episcopal Church. A new site was selected for the college at Eighteenth Avenue and North and Hefferman streets in Nashville, not far from the Fiske University campus. The author has great faith in the future of Meharry and in some of its fine teachers and graduates. The white race gave the $2,000,000 plant to the Negroes, and the white group must continue for a while to help them. The Negroes have not yet developed many good administrators and disciplinarians. In this book the author expresses his gratitude for the opportunities that America offered him.

Clinical Roentgenology of the Alimentary Tract. By Jacob Buckstein, M.D., Visiting Roentgenologist (Alimentary Tract Division), Bellevue Hospital, New York City. Cloth. Price, $10. Pp. 652, with 525 illustrations. Philadelphia & London: W. B. Saunders Company, 1940.

This book from the pen of Dr. Buckstein is welcome. It is not simply another book; it is a real contribution in which the personal observations of the author add greatly to the value of the review of the literature. This is a fair and well balanced presentation of gastrointestinal radiology, including not only the digestive tube but the biliary tract, spleen, liver and pancreas. The illustrations are well chosen and nicely reproduced. It is gratifying to find so much attention paid to the small intestine. It may be offered as a slight criticism that, since the author refers rather liberally to the literature, he might have done it somewhat more accurately. It seems a bit strange that in a six hundred page book on gastrointestinal roentgenology listing some eight or nine hundred names in the bibliographic index one finds the name of Carman referred to only twice.

In the title and in the preface the author stresses the fact that the book is a clinical treatise. The reviewer believes that clinical roentgenology is the only kind worth while. In fact, unless the roentgenologist devotes himself exclusively to research in problems relating to the purely technical side of radiology he must needs be a clinician. One who attempts to practice roentgenology from any other than the clinical point of view is foredoomed to mediocrity; the application of the roentgen rays to diagnosis and interpretation must always be clinical. The live roentgenologist is continually on his toes, missing no opportunity to familiarize himself with the underlying etiology and pathology of the various lesions and to correlate the pathologic changes found at operation and at necropsy with the changes shown by such lesions in the screen and the roentgenogram. These facts have been well emphasized by the author. Numerous case reports are interspersed throughout the text. They are interesting and help to emphasize the roentgen observations. This valuable, readable, comprehensive and dependable work merits great praise and wide distribution.

Equinococosis pulmonar: Estudio anatomoclinico-radiobroncografico y terapeutico. Por Raul A. Piaggio Blanco, prof. agregado de patología médica, y Federico Garcia Capurro, radiólogo de Instituto de cirugia para post graduados del M. S. P. de la Facultad de medicina de Montevideo (R. O. del Uruguay). Paper. Pp. 403, with 262 illustrations. Buenos Aires: Libreria y Editorial "El Ateneo," 1939.

These authors have collaborated in various other valuable contributions to the anatomy and roentgenography of the thorax. They now in a single volume review the fundamentals of bronchography and the roentgen anatomy of the lungs and discuss in order closed hydatid cyst, the complications caused by closed hydatid cyst, the treatment of closed hydatid cyst, various causes of rupture of the hydatid membrane into the bronchi, secondary complications, sequelae and residual manifestations due to the pulmonary abscess consecutive to the pulmonary suppuration and breaking down of the tissues or to operation, pleural echinococcosis, multiple pulmonary hydatidosis and hydatid infection of the bases of the lungs. The authors are especially fitted for such work, not only because of their

previous contributions to the etiology and topography of various intrathoracic lesions and for their observations on bronchography, but also by the fact that they live in that part of the world where hydatid disease is exceedingly common among the patients of their daily practice. The medical profession of Argentina and southern Uruguay have great familiarity with hydatid disease. The lesion is a rarity in the climate of the United States. An excellent bibliography is appended.

A Study of Medical Problems Associated with Transients. By Charles F. Blankenship, Passed Assistant Surgeon, and Fred Safier, Associate Social Science Analyst, United States Public Health Service. From the Division of Domestic Quarantine in cooperation with the Division of Public Health Methods, National Institute of Health. Prepared by direction of the Surgeon General. Federal Security Agency, U. S. Public Health Service. Public Health Bulletin No. 258. Paper. Price, 25 cents. Pp. 132, with 15 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1940.

The term transient is used to designate "any needy person in any community who is discriminated against in that community's program of material aid or medical care by the adoption of residence and technically related requirements." Such indefiniteness may explain why the estimates of the number of such transients vary from two hundred thousand to a million. The study sought to determine "(1) the origin of transiency from migration and the importance of lack of health as a cause, (2) the statutory limitations on public assistance to transients, (3) the administrative practices of agencies giving assistance to transients, (4) the medical needs of transients, (5) the influence of transients on community health, and (6) the most equitable and practical solution of the medical problems of transients and transiency." While economic motives largely determine interstate migration, a small part is caused by ill health, usually tuberculosis, which has brought at least ten thousand transients to southwestern states. Only a few are habitual migrants, and three fourths are made up of families and individuals who are seeking permanent locations. Legislation for relief in at least thirty-nine states contains "settlement" provisions that may be traced back to the Elizabethan poor laws. Transients have a 74 per cent higher disabling rate of sickness than residents. The prevailing illnesses include typhoid, dysentery, tuberculosis, smallpox and malaria, which may be transmitted to the communities visited. Insufficient resources compel relief agencies to enforce settlement laws strictly. Most public medical agencies are closed to transients for all conditions except emergencies. Special medical provisions for transients in some localities afford more adequate medical care. Living conditions except in the camps set up under the Farm Security Administration in California and Arizona aggravate health conditions. The study recommends the allotment of federal funds to states for the maintenance and improvement of local public health facilities rather than any health program organized directly by the federal government exclusively for transients. There is a complete bibliography.

Population Trends and Programs of Social Welfare. Papers Presented in the Section on Population Trends and Programs of Social Welfare at the Eighteenth Annual Conference of the Milbank Memorial Fund Held on April 2 and 3, 1940, at the New York Academy of Medicine. Reprinted from The Milbank Memorial Fund Quarterly, Vol. XVIII, No. 3 and 4, July and October, 1940, pages 189-221 and 345-402. Paper. Price, 25 cents. Pp. 99, with illustrations. New York: Milbank Memorial Fund, 1940.

The six papers included in this booklet were presented in the Section on Population Trends and Programs of Social Welfare at the eighteenth annual congress of the Milbank Memorial Fund, held on April 2 and 3, 1940 at the New York Academy of Medicine. The round table and conference was attended by most of the serious students of population trends and policy in this country, and the papers represent authoritative contributions. The discussions include the effects of the population trends on social welfare, child welfare, problems of education, programs of security, problems of public health and the adaptation of social welfare programs to a changing population. From these and other contributions in the field it is apparent that the social and economic life of the country has already become affected by the changed proportions of individuals in age groups and the slowing of population increase and will in the future be much more affected. Some knowledge of this subject is a practical necessity in understanding some of the social phenomena present in the United States today.

Diseases of the Urethra and Penis. By E. D'Arcy McCrea, M.D., M.Ch., F.R.C.S.I. Cloth. Price, $6.50. Pp. 306, with 181 illustrations. Baltimore: William Wood & Company, 1940.

At first glance at the title of this book the reader is apt to wonder whether there is need for such a volume. The thought is soon dispelled as the pages of the book are perused. It is true that with considerable effort one could obtain the information contained in this book from the various urologic textbooks and recent articles in the current literature. The author has attempted, in this book, to make available to the busy practitioner all of this information in complete form, thereby obviating the necessity of access to a large medical library. An excellent bibliography is appended for the student interested in consulting the source of material. The volume is well written and well illustrated. The author's descriptions of operative procedures are often better than the original articles from which they were taken. The subject matter has been completely and conscientiously covered, yet in a concise and easily readable manner, with elimination of unnecessary details. The general practitioner and general surgeon especially will appreciate having in their library a small volume in which can be quickly reviewed the embryology, anatomy and diseases of the penis and urethra, as well as complete instructions regarding their treatment by medical and surgical means.

Germs and the Man. By Justina Hill, Associate in Urology, Medical School, The Johns Hopkins University, Baltimore. Cloth. Price, $3.75. Pp. 461, with 17 illustrations. New York: G. P. Putnam's Sons, 1940.

The author attempts to present the main features of bacteriology, immunology, wound healing and the chemical attack on germs in a simple and popular style. The facts supplied are essentially accurate, but at times a certain confusion is in evidence, as is the case in discussing the virus of influenza under the heading "Influenza Bacillus." Indeed, the role of viruses as understood today could well have been the subject of at least one chapter. The scientist who reads this book may be somewhat astonished at some of the chapter headings, such as "The Wily Streptococcus and Its Brother, the Pneumococcus," "Job's Curse, the Staphylococcus, and Some Less Polite Germs" and "Rogues' Gallery." It is also a little extraordinary to find that the staphylococci "belong to the hoi-polloi and have none of the fastidiousness of more refined germs." Possibly such examples, which can be multiplied many times, add to the reader's interest, though it is a little difficult to see how bringing in the Ku Klux Klan and Napoleon are necessary even in a popular treatise on bacteriology.

Estudos cirurgicos. 3.ª serie. Pelo Dr. Eurico Branco Ribeiro, director do Sanatorió São Lucas. Fabrikold. Pp. 219, with illustrations. São Paulo: Sociedade Editora Medica Limitada, 1940.

This book consists of articles of surgical interest with special reference to disturbances caused by spinal anesthesia, patelloses of adolescents (Sinding Larsen-Johannsen's disease), diagnosis and treatment of acute pancreatitis, the crusade against cancer, incisions in surgery of the liver and bile ducts, organization of a surgical department, a rare case of renal lithiasis, blood transfusion, late typhoid suppuration, tuberculous pleural fistula, drainage in abdominal surgery, rupture of the gallbladder in closed peritoneum, hemorrhagic pancreatitis, the technic of gastric surgery, myositis ossificans and some other subjects. The work reported in the articles is based on personal experience of the author. The book is written in a pleasant style and its reading is useful for surgeons.

Manual of Florida Crippled Children's Commission. Paper. Pp. 28. Tallahassee, [n. d.]

The purpose of this work is to collect into one manual all information necessary to the personnel of the Florida Crippled Children's Commission in its work with indigent crippled children. Charity and service club organizations that cooperate in locating and sending children to hospitals and clinics operated by the commission should find the manual helpful in determining the eligibility and procedure for benefit applications for children in whom they are interested. Included with the rules and regulations are official acts of the state legislature, under which this work is carried on, lists of personnel, and an explanation of all official forms and application blanks. This manual is useful in the state of Florida but appears to be too limited in scope to be used as a pattern for other state crippled children's commissions.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

"APPARENTLY CURED" TUBERCULOSIS AND MARRIAGE

To the Editor:—Five years ago a young professional man in previous excellent health and with a roentgenogram of the chest negative for tuberculosis taken six months before, incurred during a period of stress and overwork what appeared to be pneumonia of the upper lobe of the right lung but what proved to be a pneumonic type of tuberculosis. After several months two small cavities appeared, the larger less than 2 cm. in diameter, in the midst of the consolidated area. Pneumothorax was induced and after some time was satisfactory, i. e., there was no visible cavity, the sputum was negative for tubercle bacilli., there was no elevation of temperature and a collapse of about 80 per cent was achieved. Eighteen months later the pneumothorax was abandoned because of a thick pleural effusion with pocket formation. In a few months the air and fluid were absorbed, and since then the lung has appeared well healed and no evidence of cavitation is present. The other lung has always been clear. Beginning three years ago the patient lived for one year on only partially restricted activity and for the past two years has led a perfectly normal existence, avoiding only overexertion and active exercise. There have been no symptoms during this time; the temperature and the sedimentation rate have been normal. There is no cough or expectoration. Is his tuberculosis healed? What is the possibility of recurrence? May marriage be permitted?

M.D., New York.

ANSWER.—According to the standards of the National Tuberculosis Association, the best classification for a patient such as the one described would be "apparently cured." This rating is justified under the following conditions: Constitutional symptoms must be absent. If sputum is present it must be found to contain no tubercle bacilli both by concentration and microscopic examination and by culture and animal inoculation. When sputum is absent, gastric lavage should be employed and the stomach contents examined for tubercle bacilli. The lesions should be stationary and must have undergone as much improvement as seems possible on roentgen inspection. When these conditions have existed for a period of two years under ordinary conditions of life, the patient may be classified as apparently cured.

At one time there was a classification of "cured," but this has been removed. The term "healed" is never justified in any type of pulmonary tuberculous lesion during the lifetime of the diseased person, since the methods of examination available are not sufficiently refined. The evidence obtained from shadows on roentgenograms, such as decrease in extent of disease, the appearance of stringlike shadows or definite increase in density, thought to be due to fibrosis, or even shadows so dense as to indicate the deposition of calcium, is not sufficient to justify the word "healed." Indeed, lesions may so decrease that the roentgenogram reveals no shadows whatever but still foci of living tubercle bacilli remain.

Physical signs and symptoms may completely disappear and the red cell sedimentation rate and the blood picture become normal and remain so, yet definite lesions may be present in the lungs whose location cannot be detected by any or all methods of examination of the living body. There are many other parts of the body in which tuberculous lesions may develop before, simultaneously with or after those in the lungs, and all of which may contain living tubercle bacilli in the absence of external manifestations of the disease, and yet their locations may not be disclosed. As long as the tissues react to tuberculin the word "healed" should be carefully avoided, as it may give the patient a false sense of security.

Tuberculosis is a relapsing disease; it is one of remissions and exacerbations. While many patients with demonstrable lesions which come under control never have recurrence of them and never have new clinical lesions develop in the lungs or elsewhere, to the point of causing illness, there are others who do have reactivation of old lesions or incur new ones. As there is no way of determining whose lesions will reactivate or in whom new ones will appear, the only safe course is to keep the patient under close medical observation not for one or five years but for the remainder of his life. Roentgenologic inspection should be made of his chest at least every year and the condition compared with that shown in previous roentgenograms.

Some persons who have had pulmonary tuberculosis treated successfully eliminate tubercle bacilli during attacks of acute colds and bronchitis. Therefore the sputum should be examined during such attacks. Once or twice a year the urine should be examined for tubercle bacilli even though symptoms are absent. With the appearance of symptoms in any part of the body, tuberculosis should be considered until lesions are found or ruled out.

Marriage is not contraindicated, provided the patient keeps under close medical observation and exercises extreme precaution with reference to sputum whenever it is present with an acute infection of the lower part of the respiratory tract or any other condition.

MUSCULAR IRRITABILITY AND "MOUNDING"

To the Editor:—On several occasions I have observed the physical sign which is termed "mounding." The body of a muscle is struck with a percussion hammer and there occurs a momentary and local hardening and tumefaction of the muscle at the point of contact with the hammer. Does this phenomenon have clinical application? Can you give references?

Thad P. Sears, M.D., Pueblo, Colo.

ANSWER.—The sign of "mounding" is technically an indication of myotatic irritability. The phenomenon results from a localized contraction of muscle when it is struck with a percussion hammer. "Mounding" is not quite an accurate description of what happens, for there is a "dimpling" instead of a "mounding" of the skin over the muscle, caused by the slow tonic response, lasting a few seconds, with an equally slow lingering relaxation.

Myotatic irritability is found in a number of neuromuscular diseases, particularly myotonia congenita, or Thomsen's disease, and dystrophia myotonica (myotonia atrophica). In itself the sign is not of importance, but because it occurs so consistently in both myotonia congenita and myotonia atrophica the phenomenon is one of the principal signs of these diseases.

Myotonia congenita was originally described by Thomsen, who had the disease himself. Later Nissen, his great-nephew, added three to the four generations of sufferers in his own family from this rare disease, reporting 35 cases. Although the disease is hereditary in type, occasional examples are found of sporadic and single cases. Careful investigation, however, usually reveals a hereditary tendency.

The practical importance of the diagnosis at the present time lies in the modern treatment of myotonia congenita with quinine hydrochloride as described by Wolf and by Kennedy and Wolf. The dosage of quinine is 5 grains (0.32 Gm.) three times a day. This amount is usually well tolerated and has proved to be adequate for adults in eliminating the symptom of myotonia.

Myotatic irritability is not so noticeable a feature of dystrophia myotonica. As atrophy supervenes, the myotonic response disappears. Quinine is of less value in the treatment of the atrophic type of myotonia than in the congenital group.

References:

Thomsen, Julius: Tonische Kraempfe in willkürlich beweglichen Muskeln in Folge von ererbter psychischer Disposition (Ataxia muscularis?), *Arch. f. Psychiat.* **6:** 702, 1876; Nachträgliche Bemerkungen über Myotonia congenita (Strümpell), Thomsen'sche Krankheit (Westphal), *ibid.* **24:** 918, 1892.

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Kennedy, Foster, and Wolf, Alexander: Experiments with Quinine and Prostigmine in Treatment of Myotonia and Myasthenia, *ibid.* **37:** 68 (Jan.) 1937. Quinine in Myotonia and Prostigmine in Myasthenia, *The Journal,* Jan. 15, 1938, p. 198.

HUMAN PERSONALITY AND EMOTIONS

To the Editor:—What is the accepted opinion with regard to such abstract qualities in human personality as ambition, a sense of responsibility, egotism and patience? Can they be connected with any particular gland or portion of the brain? What are the latest observations on emotions in general such as anger or joy? Please send references.

M.D., Mississippi.

ANSWER.—Human personality is best understood and evaluated in terms of the psychologic and biologic components that make up each individual. There is a healthy growing tendency to talk in terms of psychobiology. Evaluation of personality factors in these terms not only recognizes the factors contributed by the underlying cerebral structures and patterns but also considers the general body action and psychologic training.

There are of course certain areas of the brain in which special functions are concentrated, as for example the motor speech area. Also it is known that the hypothalamic area is the important center that controls many vegetative functions. The tha-

lamic areas are concerned with feeling tone or the affective component of action. Not only does a man who gets angry have increased secretion of epinephrine, increased blood sugar and many other physiologic changes, but also it must be emphasized that the psychologic conditioning that induces the anger is part of the individual's reaction pattern. Anger therefore has psychologic and biologic components.

The following references are recommended to elucidate this psychobiologic point of view:

The Interrelationship of Mind and Body, *A. Research Nerv. & Ment. Dis.*, Proc. (1938), 1939, vol. 19.

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Meyer, A.: Problems of Mental Disorder, New York, Macmillan Company, 1934.

Dunbar, H. F.: Emotions and Bodily Changes, New York, Columbia University Press, 1938.

Karin, Stephen: Psychoanalysis in Medicine, New York, Oxford University Press, 1935.

Billings, E. G.: A Handbook of Elementary Psychobiology and Psychiatry, New York, Macmillan Company, 1939.

TREATMENT OF INTRACRANIAL SUBARACHNOID HEMORRHAGE

***To the Editor:*—Is a physician justified in treating a case of hemorrhage from an aneurysm of the circle of Willis by repeated spinal drainage when there are signs of increasing spinal fluid pressure? Kindly give references, if any, advocating this method of treatment.**

Ernest E. Thompson, M.D., Lisbon, N. Y.

ANSWER.—Repeated daily lumbar puncture with the slow removal of from 15 to 25 cc. of cerebrospinal fluid is a safe and commonly used procedure in cases of intracranial subarachnoid bleeding, regardless of its origin. Such a withdrawal may be done with increasing fluid pressure, but it should always be done slowly and with manometer control. Intravenous dehydrating agents, such as sucrose, may accompany the puncture treatment, and for reduction of the pressure it is the method of choice, since the spinal puncture should be primarily for the purpose of freeing the cerebrospinal fluid of red blood cells, so that as complete absorption as possible of the continuously formed cerebrospinal fluid may occur without the obliteration of the absorptive mechanism—the arachnoidal villi. Such aneurysms have been successfully treated surgically by direct intracranial attack or by ligation of the carotid. Two recent articles by McDonald and Korb shed light on the subject:

McDonald, C. A., and Korb, Milton: The Circle of Willis: Its Angles and Its Aneurysms, *Rhode Island M. J.* **23**: 145 (June) 1940.

Intracranial Aneurysms, *Arch. Neurol. & Psychiat.* **42**: 298 (Aug.) 1939.

POLLENS IN PUERTO RICO

***To the Editor:*—Are there the same allergens in Puerto Rico as we have here in the United States? More specifically, a patient intends moving to this island in the near future as a member of the engineering staff of the United States Army. He is severely allergic to grasses and the ragweeds and has been controlled with success by perennial therapy. Before he leaves he would like to know if he must continue this therapy for prophylactic reasons, since he intends spending the entire summer and fall in this place. Are there grasses and weeds there similar to ours in the Eastern states or are they different?**

Manahiem Siegal, M.D., Brooklyn, N. Y.

ANSWER.—The patient will not encounter ragweed pollen in Puerto Rico. According to the best information available he will not encounter pollen of any related plant, so it would not seem necessary to continue desensitization against ragweed. He is probably receiving desensitization treatment with a standard grass mixture containing the pollens of sweet vernal grass, blue grass, orchard grass, timothy and redtop. None of these grasses are found in Puerto Rico. However, Bermuda grass is present in Puerto Rico as well as other parts of the West Indies. It is the grass which is usually used for lawns or golf courses and is well known as a serious cause of allergy. Those who are sensitive to the common meadow grasses of the Northern states are usually sensitive to Bermuda grass. The amount of pollen in the air in Puerto Rico from Bermuda grass and other native grasses is probably less than the amount in the air in the Northern and Eastern states during the grass season, but the Puerto Rican pollinating season lasts throughout the year. No pollen statistics are available. It would not seem advisable to omit desensitization against grass even though it cannot be guaranteed that the kind of grass pollen which the patient is now receiving will protect him against grass pollens he will encounter in Puerto Rico. The patient might well be tested with Bermuda grass pollen. If he is strongly sensitive, this fact should be taken into consideration in deciding on appropriate protective treatment.

INTERRUPTION AND RESUMPTION OF PERTUSSIS VACCINATION

***To the Editor:*—A child aged 20 months received a first dose (1 cc.) of Sauer's D. S. pertussis vaccine. An intercurrent infection of the upper part of the respiratory tract has prevented me from continuing with the next vaccination. The child is now in its third week of the current illness, and I have decided to discontinue the pertussis vaccination entirely for the present. Is there any danger of a severe reaction in this child if and when this immunization procedure is resumed? When will it be safe to start it again? Should the vaccination be started anew as if the child had never received the first dose?**

E. L. Straub, M.D., Philadelphia.

ANSWER.—Whenever the immunization procedure has been interrupted for more than a month it is advisable to give the entire series of three injections. Authorized Haemophilus pertussis vaccine (Sauer) contains no trace of animal protein. It does not sensitize the infant, and there is no danger of a severe reaction. The preferred concentration of authorized H. pertussis vaccine is the new 15,000 million bacilli per cubic centimeter. It causes fewer reactions than the other concentrations. The dose with the least reactions is 1, 2 and 4 cc.; the best interval between the three injections is three weeks. Syringe and needle should be sterilized by heat and the vial cap and the patient's arm sterilized with alcohol on sterile cotton.

CONTINUED ADMINISTRATION OF MAGNESIUM SULFATE

***To the Editor:*—I gave magnesium sulfate 20 grain (1.3 Gm.) enteric coated tablets before meals to a patient with severe psoriasis over the entire body (diagnosis by a dermatologist) coming on soon after cholecystectomy five years ago, and the condition cleared within two weeks. The skin remains clear as long as this is taken but soon after it is discontinued itching, heat and redness appear but again clear as soon as magnesium sulfate is renewed. The question is What is the harmful effect of this treatment long continued, as seems needed in the case, and what will be the probable first untoward symptom? What might be the effect of adding one-half grain (0.03 Gm.) of sodium succinate to each 10 grains (0.65 Gm.) of magnesium sulfate?**

P. W. Hildebrant, M.D., Mount Sterling, Ohio.

ANSWER.—The fact that soluble salts of magnesium are poorly absorbed in the intestine is one reason that they are satisfactory in large concentrations as cathartics. Elimination of any absorbed magnesium salts begins almost immediately through the kidneys, resulting in diuresis if the amounts of the salt are sufficiently high. The U. S. P. dose of magnesium sulfate is 15 Gm. In this instance the patient received only 1.3 Gm., enteric coated. There should be little unfavorable reaction in taking this amount of magnesium sulfate over a period of time, provided there is no extensive kidney disease. Possibly a slight colitis might be anticipated. There seems to be no reason why one should add 0.03 Gm. (one-half grain) of sodium succinate to each 0.65 Gm. (10 grains) of magnesium sulfate; it would seem to be an irrational mixture.

SWALLOWING FLIES

***To the Editor:*—Will you inform me what poisons, if any, may be liberated by green bottle flies or blow flies if they are swallowed?**

Charles H. Lupton, M.D., Norfolk, Va.

***To the Editor:*—Please give me an opinion on the possibility of the inadvertent ingestion of house flies causing severe illness and in pregnancy causing miscarriage.**

W. N. Jenkins, M.D., Port Gibson, Miss.

ANSWER.—Blowflies breed in decaying animal matter and feed on various types of organic débris. They are, therefore, more or less laden with germs of various kinds. Some of these organisms are inimical to man and may cause digestive disturbances or the onset of diseases such as dysentery or typhoid. There are no true poisons or toxins emitted by blowflies or contained in their bodies. There are instances in which blowflies have been swallowed without producing any ill effects. P. F. Fattig, of Emory University, reports having twenty-five different people drink carbonated water in which from one to several green bottle flies had been soaked for several days. No ill effects were observed by any of these persons.

The swallowing of houseflies would not necessarily result in any ill effects. All varieties feed on excrement and other waste matter and may therefore contain pathogenic germs which could cause disease. The knowledge that a fly had been swallowed might, in a sensitive person, produce vomiting and perhaps more serious reactions.

PREGNANCY AFTER NEPHRECTOMY FOR TUBERCULOSIS

To the Editor:—A white woman aged 30, a primipara, had her last menstrual period Oct. 26, 1940. Her past history discloses that she had a nephrectomy on the right side in 1930 because of tuberculosis of the right kidney and of the bladder. Since the operation she has been in perfect health, with no urinary complaints. She has gained 20 pounds (9 Kg.) and is now seven weeks pregnant. The catheterized specimen of urine shows specific gravity 1.020, acid reaction, 3 to 4 red blood cells per high power field, occasional white blood cells, a slight trace of albumin and no casts. The Wassermann reaction is negative. The hemoglobin is 70 per cent, the red cell count 3,420,000 and the white blood cell count 11,300 with 65 per cent polymorphonuclear leukocytes and 35 per cent small leukocytes. The sedimentation rate is within normal limits. There is no evidence of pulmonary tuberculosis. Are the presence of red blood cells in her urine and the fact that she has had a nephrectomy any indication for a therapeutic abortion? Should the patient be given any specific medication or diet?

M.D., Pennsylvania.

ANSWER.—A few red blood corpuscles in the urine are not of great significance, but in a case such as this it is necessary to determine positively whether the remaining kidney is or is not healthy.

If a capable genito-urologist says the kidney is tuberculous, abortion is indicated. If it is healthy the pregnancy may be allowed to proceed, with of course great watchfulness.

POSSIBLE AGE OF CONCEPTION

To the Editor:—An attorney asked me if it is true that a 12 year old girl can or will become pregnant the first time she has intercourse. He stated that two members of my profession have told him it is not possible for a girl to become pregnant on the first intercourse. I have never heard of such a claim; however, I would appreciate your statement as this may have some legal bearing. The 12 year old girl is pregnant.

M.D., Kansas.

ANSWER.—A 12 year old girl can become pregnant at first coitus. The state of development of the sex organs and not the age will determine the possibility of conception. Pregnancy is theoretically impossible prior to puberty. Puberty is heralded by the onset of the menses, which may occur normally as early as the age of 9 or 10 or be delayed until 15 or 16. The age of puberty varies according to race, climate, hereditary background and social status. After puberty there occurs a period of development which has been designated as adolescence, during which the reproductive organs develop their capacity for reproduction. In this period follicular growth occurs in the ovaries, but follicles fail to rupture. Usually adolescence is a period of physiologic infertility. The period of adolescence in human beings may last two or three years. Maturity is reached when ovulation begins, after which conception is possible.

PREGNANCY IN POSTENCEPHALITIC PARKINSONISM

To the Editor:—Is there any legitimate medical indication for a therapeutic abortion in a woman aged 36 with one normal delivery seventeen years ago who has at the present time an advanced degree of postencephalitic parkinsonism which she has had for the past fifteen years? She has recently had oculogyric crises and is eight weeks pregnant with about grade 2 nausea and vomiting. I have never seen or heard of a case of pregnancy in parkinsonism, and I am interested to know if there is any danger in allowing her to go to term. Tincture of stramonium and bulgarian belladonna medications control her symptoms but little.

M.D., Utah.

ANSWER.—In view of the long duration of the chronic encephalitis it would probably be safe to let the pregnancy take its course. However, if the vomiting should become more severe or other complications set in, one would be justified in considering the induction of labor at an earlier stage than would be justified if no such nervous disease existed.

BOWING OF LEGS IN INFANCY

To the Editor:—A child aged 16 months has had the best of care and is normal in all respects except that his legs are quite bowed. What is the prognosis and treatment?

M.D., Maine.

ANSWER.—Bowing of the legs in infancy is usually the result of mild rickets, which at times occurs despite careful dietary management. No treatment of a mild or moderate curvature at this age is necessary, as the normal process of bone growth usually straightens the limbs within a period of one or two years.

STEREOPSIS AND GLASSES

To the Editor:—I have been told that a man wearing glasses does not see the proper images when viewing roentgenograms in the stereoscope. Are persons without glasses better able to view stereoscopic films according to the laws of optics?

Everett W. Gaikema, M.D., Grand Rapids, Mich.

ANSWER.—Glasses are not a handicap to viewing stereoscopic roentgenograms. As a matter of fact, any one wearing glasses who has even a moderate degree of astigmatism has sharper vision, and therefore even more accurate stereopsis, than one with a refractive error who does not wear glasses, particularly if this refractive error is astigmatic. Stereopsis depends on binocular visual training early in life. If one has developed this sense one will retain it, unless the visual acuity in one eye is reduced below 20/50.

TESTING STOOLS FOR BLOOD AFTER IRON AND COPPER ADMINISTRATION

To the Editor:—Does a patient taking 10 units of liver extract intramuscularly per week and daily doses of copper and iron give a stool positive for blood to the benzidine test in the absence of conditions giving rise to bleeding in the gastrointestinal tract?

Harold J. Rothenberg, M.D., Chicago.

ANSWER.—The use of intramuscular liver extract does not produce a positive benzidine reaction in the stools. Iron given orally, however, does affect the benzidine reaction in the stools in such a way that it is practically indistinguishable from the test for blood. In cases in which it is necessary to determine chemical blood in the stools, the guaiac test should be used. In the presence of iron, this test may give a temporary purplish blue, but this reaction is quite different from the sustained deep blue that is obtained with blood.

TOXIC SYMPTOMS FROM INSECTICIDE

To the Editor:—Recently a flour mill employee became ill following the use of an insecticide. His symptoms were fatigue, headache and pains in abdomen, back and flexor muscles of arms and legs. He had occasional vomiting; the blood pressure was 96 systolic, 60 diastolic, the pulse 82. There was moderate cyanosis of the lips and nail beds. Tenderness was present in the lumbar region. Otherwise the examination was negative. He had been using "Dr. Lobell's Mill Insecticide," manufactured by the Huntington Laboratories of Huntington, Ind. The only known ingredient is pyrethrum. Do you have a formula for this insecticide? Could the patient's condition have been the result of using it?

J. R. Cummings, M.D., Flemingsburg, Ky.

ANSWER.—Dr. Lobell's Mill Insecticide is said to consist of pyrethrum extract dissolved in a mixture of about 90 per cent by volume of odorless kerosene and about 10 per cent by volume of carbon tetrachloride. It is entirely possible for the symptoms described to be due to exposure to this mixture, particularly in view of the presence of the pyrethrum and carbon tetrachloride.

SODIUM HYPOCHLORITE FOOTBATH FOR RINGWORM

To the Editor:—When I tried to buy the 20 per cent solution of sodium hypochlorite mentioned in Queries and Minor Notes (Footbath Solutions for Ringworm, The Journal, April 20, 1940, p. 1577) I was told that such a solution was not manufactured and besides was unstable unless sodium hydroxide was added; this, however, would make the solution irritating to the skin.

B. S. Stell, M.D., Angola, N. Y.

ANSWER.—Sodium hypochlorite, 20 per cent solution, is unstable in open or improperly sealed containers. It can be purchased from a number of chemical companies in chemical carboys in 20 per cent strength. All that is necessary is to dilute this solution 20 to 1 with water for use in footbaths. This solution should then be changed every two days.

THUMB SUCKING

To the Editor:—The reply to W. E. Oldham's query on thumb sucking (Queries and Minor Notes, Dec. 28, 1940, p. 2301) would not be endorsed by psychiatrists or by most pediatricians. The use of mechanical restraints should be reserved for the most carefully selected cases. I myself doubt that they should ever be employed. In any consideration of thumb sucking there are two important factors, both of which were ignored in the reply: 1. Thumb sucking is a normal activity of most young infants, a legitimate method of obtaining satisfaction and a means of learning the uses of their senses. In most cases the practice diminishes as other methods of obtaining satisfaction are mastered. 2. When the practice is prolonged beyond the period of infancy and excessively indulged in, it must be considered as a signal that all is not well with the infant's world. It is the responsibility of the physician not to stop the habit but to correct the factors responsible for its continuation.

Gustave F. Weinfeld, M.D., Highland Park, Ill.